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MEDICAL SCIENCES.

ART. I. *Clinical Reports of Cases treated in the Medical Wards of the Pennsylvania Hospital.* By W. W. GERHARD, M. D. Resident Physician. (Part III. Diseases of the Brain and its Membranes.)

CASE I. *Tuberculous Meningitis—Tubercles in Lungs and Bronchial Glands, &c.*—Charles ——, a negro, æt. 22, seaman, unmarried, entered July 31st, 1834. Intelligence very obtuse at admission, but could still give some account of his disease. Intense cephalalgia for the last week while on board of a vessel; restlessness; heat of skin; delirium; was purged with salts, but under no regular medical treatment.

After his admission, insomnia; cephalalgia increased; eyes injected; expression of wildness; heat of scalp. Delirium so violent as to require him to be removed to the cells on the 7th of August. On the evening of the 7th answers still obtained; intelligence very dull; rigidity slight in both arms, nearly equal; pupils dilated, especially the left; face not distorted.

Treatment.—Copious local depletion, by cups to the head; blister over the scalp three days before death; solution of tartarized antimony. Death 9th, at 11, A. M.

Autopsy, August 10th, eighteen hours after death, at 5, A. M.—Exterior. Moderate emaciation; rigidity of extremities; cuticle removed by a blister on back of neck.

Head.—Blood rather abundant on the exterior of the dura mater; longitudinal sinus filled with a firm fibrinous coagulum; liquid blood in the sinus of the base; arachnoid moist; pia mater much and equally injected in the small vessels, it is easily detached from the convolutions, and is neither thickened nor granulated. *Base of brain.*—Left fissure of Sylvius filled with a band of firm semi-transparent cream-coloured substance, in which are deposited a multitude of transparent granulations, the largest of the size of a small pea. The band surrounds the vessels, and is detached with the pia mater; it extends through the fissure of Sylvius, and terminates about the level of the corpus callosum. The right fissure is filled with a substance precisely similar in every respect to that described, but a little less abundant. The pons varolii, optic nerves, and the inferior surface of the anterior and middle lobes of the cerebrum and of the cerebellum, are covered by numerous granulations, deposited in a thin layer of the yellow substance. The cerebral substance beneath the granulations in the fissures and on the pons, is softened in the depth of half a line to a line. Cortical substance of cerebrum rosy; medullary more abundantly dotted with minute points than usual. Ventricles containing three ounces of milky serosity, central parts pulpy, not diffluent, of milky whiteness. Optic thalami soft on the surface; corpora striata firm, moderately injected. Plexus choroides moderately injected.

Medulla spinalis.—Arachnoid in superior third, dry, a little rough to the touch, without distinct granulations; the inferior portion retains its shining moist appearance. Consistence good; injection moderate.

Thorax.—Left lung adherent at summit, where there is a mass of crude yellow tubercles, of the size of a millet seed to that of a large pea, surrounded by gray granulations deposited in the substance of the lung, which is permeable to the air, and not much engorged with blood. Small tubercles are scattered throughout the lobes. A bronchial gland in the lower lobe of the size of an almond is converted into tuberculous matter, in part caseous and in part soft. Numerous granulations beneath the pleura, covering the whole surface of this lung, none beneath the costal pleura. Right lung not adherent; tissue permeable to the air; granulations numerous beneath the pleura and small tubercles, disseminated through the lung. Bronchi pale. Bronchial glands more or less completely replaced by tuberculous matter. *Heart* of moderate size, firm; valves natural; large coagulum in the left ventricle; a drachm of serosity in the lateral ventricles.

Abdomen.—*Stomach*, contents not noted; mucous membrane of

natural thickness and consistence; mammillated along the small curvature; no bright injection.

Small intestine contains a little yellow liquid. Mucous coat pale, of good consistence. Glands of Peyer pale, and slightly elevated; one near the valve contains a little tuberculous matter. *Mesenteric glands* small, not tuberculous.

Large intestine containing a thin liquid. Mucous coat of a pale slate colour in the cœcum, and firm. It is pale, but rather soft; in the rest of the colon very thin, and spotted with little dark circles, an eighth to a quarter of an inch in diameter, without alteration in thickness.

Liver rather large, dark red, firm, bile abundant, some tuberculous granulations in the peritoneum covering it. *Spleen* firm, but full of gray granulations. Kidneys firm.

Case II. *Tuberculous Meningitis—Effusion of Concrete Yellow Substance at the Base of the Brain—Softening around the Tuberculous Matter—Little Serosity in Ventricles—Numerous Gray Granulations in the Lungs—Ulcerations of the Glands of Peyer.*—Asa ——, æt. 24, cabinet maker, born at Philadelphia, entered September 6th, 1834. Was always of feeble constitution; when two years old, had caries of the bones of the face, with discharge of matter from the abscess for some months.* For the last two years is more dull than formerly; is subject to head-ache, at times severe, but has rarely quitted work. He has coughed a little at times, though scarcely so much as to attract the notice of his friends. The dullness and cephalalgia increased within the last six weeks; and three weeks ago, while at work he suddenly lost the use of his speech and of the right arm; he walked home, took some purgative medicine, and the partial paralysis ceased in a day or two afterwards. The cephalalgia continued with constipation, but no vomiting; intelligence still dull; he applied for medical aid at the dispensary, where the only symptom noticed was constipation. Two days before his admission his speech was again impeded, and there was a sudden partial loss of motion in the right arm and leg, with retraction of the mouth towards that side; delirium; he was still able to walk. It was not known whether any rigidity or alteration of the sensibility had existed. He was bled twice, and purged before his admission.

Present state.—September 6th. Hair black; eyes dark; skin brownish. Emaciation advanced. Height, five feet ten inches. Decubitus

* His father died of consumption; he has one brother now dying of this disease. A mother and sister are in good health. Several paternal relatives have died of chronic diseases of the chest.

indifferent; intelligence very obtuse; answers scarcely intelligible, incoherent; complexion dull; expression stupid; nostrils compressed; right corner of the mouth drawn backwards, especially while speaking; tongue a little turned to the right, very red and dry, with elevated papillæ. Right arm in motion, catching at the bed-clothes and in the air, it is evidently rigid at the elbow and wrist. Right leg a little flexed, and slightly rigid; no rigidity in left arm or leg; sensibility in all the limbs seems natural; motion slow and difficult, both in the right arm and leg; speech nearly inarticulate, deglutition easy; subsultus tendinum of both wrists; anorexia; no vomiting; thirst; constipation; abdomen distended moderately; skin very hot and dry; no cough; percussion sonorous in both sides of the chest; respiration 20 in the minute, pure and expansive; pulse regular, soft, 80. Cups to back of neck; (to take ℥x. of blood.) Mustard pediluvia.

7th. Delirium all night; same expression of countenance; same rigidity of the right side; right pupil rather contracted; speech more distinct; hearing and sight good; no vomiting nor dejections; pulse 80 to 84 during the whole day, full, and rather resisting. Neutral mixture. Saline cathartic.

8th. Restless at night, but made no effort to rise; no answers when questions are addressed to him; mouth now drawn to the left side; pupils dilated, left larger than right, neither contractile; rigidity not evident in the right side, which is now completely paralyzed; floccitation confined to the left hand; doubtful rigidity of the left elbow; sensibility very obtuse on the right side, nearly natural on the left. Swallows every thing offered, but shows no desire either for food or drink; speech inarticulate; pulse 120, much weaker; respiration 20, high. Blister over the whole scalp. Profuse sweats during the night; pulse weaker and more frequent; convulsions, followed by death in the morning of the 9th.

Autopsy on the 9th.—Exterior. No rigidity; body still warm; little emaciation; no œdema.

Head.—Dura mater adhering strongly to cranium. Longitudinal and lateral sinus full of liquid blood. On the superior part of the cerebrum the arachnoid is rough and gritty to the touch, and adheres strongly to the convolutions, which are not flattened; beneath the arachnoid on both sides, but especially the left, are scattered yellowish patches adhering closely to this membrane, and detached with it from between the convolutions. Vessels of the pia mater not injected. Base of the brain covered and nearly concealed by a layer of concrete yellow substance, in which are a multitude of round, gray, semitransparent granulations, very hard, and not larger than a millet

seed, but in general much less. This layer covers the commissure of the optic nerves, the annular protuberance, and the medulla oblongata; it is seen on the whole posterior surface of the brain, and upon the cerebellum, being less in the form of a distinct layer as it approaches the sides of the brain, and is replaced by the irregular patches described, on the convex surface. The same straw-coloured substance is prolonged on either side into the fissures of Sylvius, and extends throughout their whole length; it is most abundant on the left side, where it is six or eight lines in breadth, and from two to four in thickness; it is but little less on the right. The substance surrounds and conceals the vessels of the fissure, is of a cartilaginous hardness, but does not present as distinct granulations as the layer at the base of the brain. Plexus choroides rough to the touch, and containing some very minute transparent granulations. Cerebral substance of the summit of the brain is firm, very moderately injected, the gray a little rose-coloured, the white but little dotted with blood. Corpus callosum and fornix pale and firm; consistence of the whole right hemisphere, except along the fissure of Sylvius, perfect; injection very moderate. The inferior two-thirds of the corpus striatum of the left side was pulpy, of a yellowish colour; below the corpus striatum the brain was softened to the following extent; superiorly the softening was bounded by the corpus striatum; inferiorly by the fissure of Sylvius, and around the fissure by a portion of sound cerebral substance at the base, from one to three-fourths of an inch thick; its antero-posterior diameter was from two and a half to three inches, beginning less than an inch from the anterior extremity of the brain. The softened part was pulpy, but not diffluent, although in strong contrast to the firmness of the surrounding parts, of a pale orange-yellow colour, dotted with a few red points, which became more numerous near the fissure of Sylvius. The sound cerebral substance was rather abruptly continued into the diseased parts, but there was no increase of vascularity, or traces of a cyst. Each lateral ventricle contained about two drachms of limpid serosity. Spinal marrow could not be examined.

Thorax.—Lungs not adherent; no granulations or tubercles in the pleuræ. Right lung contains in all its lobes, especially in the upper, a multitude of gray, semi-transparent granulations, which are most numerous beneath the pleuræ; these granulations are thickly disseminated throughout the whole pulmonary parenchyma. Two or three yellow, hard tubercles, not larger than peas, are found in the upper lobe. Left lung wrinkled near the summit, above a mass of gray granulations, the size of a hazel-nut, deposited in hardened pulmo-

nary tissue, apparently owing to an infiltration of the same gray matter; gray granulations similar to those in the right lung, but less numerous, are found beneath the pleura, and throughout the tissue of the lobe. The lower is like the rest of both lungs, dark-coloured and permeable, but contains no tubercles or granulations. Bronchi in both lungs rosy, containing a little mucus. Bronchial glands small, containing but a single point of yellow tuberculous matter. Heart firm, red, containing liquid blood. Pericardium not adherent.

Abdomen.—Stomach contains a thin greenish liquid. Mucous membrane pale throughout, rugous and mammillated; thickness a little increased, especially along the large curvature; consistence perfect.

Small intestine, (examined only in the six feet nearest the valve.) Glands of Peyer ulcerated, of reddish-brown colour, and studded with tuberculous points. Mesenteric glands small, pale, not tuberculous.

Large intestine not examined.*

Liver brown, a little engorged with blood, not fatty, without tubercles or granulations. *Spleen*, numerous gray granulations in its membrane, and a few in its tissue, which is firm; length three inches and a half, breadth an inch less.

Case III. *Tuberculous Meningitis, and Effusion in the Ventricles supervening in a Phthisical Patient.*—T. G. æt. 30, a weaver, married, has three children, from Lancashire, entered May 21st, 1835. Has been three years in America; father and mother still living; the latter thin and delicate; lost a brother and sister of pulmonary consumption; has two brothers and a sister living, but with one exception, rather delicate.

In the summer of 1832, was taken with fever, accompanied by delirium, lasting several weeks. He recovered, but never quite regained his former strength; since that time, is subject to head-ache and dyspepsia, with flying pains about the epigastrium and stomach. Bowels habitually constipated. Last December had hæmoptysis, lasting several days, of bright-red blood, quantity moderate, but not recollected. Cough began after the hæmoptysis, and has continued since, is dry, short, with scanty transparent expectoration. The hæmoptysis was renewed a day or two before his entrance; the blood was bright-red, not exceeding one or two table-spoonfuls in the day, and ceased after three or four days. No constant pain in the

* The body was removed to the country for burial, and time was not allowed for a detailed examination of all the organs. The points of greatest interest were verified with much care.

chest; emaciation rapid from the first hæmoptysis; sweats profuse at night, cold and clammy for at least two months before his entrance; constipation habitual; appetite bad; cephalalgia continued; no alteration was observed in his intelligence, except that he was more nervous and irritable than before his sickness.

At his entrance the emaciation was very great; slight œdema of legs; strength very feeble; intelligence good, but is very restless; sleeps badly; answers correct, but not precise, running into details foreign to the question, like those given by hypochondriac patients; cephalalgia constant, but much diminished when a laxative had operated; hearing good; sight natural; skin dry; sweat at night; pulse from 110 to 130; cough short, dry; expectoration of transparent mucus, with bright blood in small quantities intermixed; no pain in chest, uneasiness referred to base of sternum; appetite bad, cannot eat meat, but asks for porridge; constipation; vomiting on two or three occasions of the liquid drunk, a little tinged with bile; percussion of chest sonorous throughout its whole extent; auscultation difficult, from the nervous spasmodic respiration, caused by the application of the ear to the thorax, but respiration pure, though very feeble in the whole anterior part of the chest; no rhonchus heard; auscultation imperfect posteriorly, but without other results than the very feeble pulmonary expansion; intercostal spaces depressed on both sides; post and sub-clavicular depressions very great, much deeper on the left than the right side of the chest. Pectoral mixture, with gr. j. of sulphate of morphia. Decoction of Iceland moss, a pint daily. Three cups, (scarified to each side of the chest.)

From the entrance of the patient to the 8th of June, no important change occurred in the symptoms. The strength gradually declined, but there was no increase of the cough. The cephalalgia was frequent, but ceased entirely after the administration of a mild cathartic.

On the 8th of June, vomiting of abundant greenish liquid, and strong acid taste in the mouth. Magnesia in mint water, ʒj. Some of his friends saw him during the day, and remarked that his intellect was more confused than previously.

On the 9th, recurrence of the vomiting; cephalalgia not more intense than on the preceding day; answers rather slow; somnolence at intervals. Towards evening slight delirium. At 11, P. M. Delirium, continuing the night; he attempts to leave his bed; talks vaguely, at times muttering, but sometimes in a loud voice.

10*th*, *at* 7½, *A. M.* Decubitus listless; face flushed in irregular patches on each cheek; nostrils contracted; mouth alternately retracted to the right and left side; eyes open, the left more than the

right, pupils turned upwards, dilated, but regular; no strabismus; frequent grinding of the teeth; head thrown a little backwards; right arm in motion, grasping, as if at objects in the air; no evident rigidity, but resistance to efforts at flexing or extending all the limbs; sensibility on pinching, obscure generally, rather more on the left than the right side; intelligence almost destroyed, but he still answers to some questions, says he feels well; hearing very dull; sight doubtful; delirium constant; words distinct, but incoherent, moderately loud; no subsultus at the wrists; protrudes his tongue when directed to do so in a loud voice, it is whitish, but moist, and not turned to either side; deglutition easy, drinks eagerly, and takes a few spoonfuls of arrow-root; abdomen tympanitic, not tender; no stools, nor vomiting; urine discharged in the morning; pulse regular, of moderate volume and strength, 120 in the minute; respiration 16, rather high, not stertorous; cough and expectoration entirely suspended. Ten ounces of blood to be taken by cups from the head. Ice to the scalp after the cupping. The pulse did not falter after the cupping, and in the afternoon ten or twelve ounces more of blood were taken by leeches from the temples, and a large blister applied to the back of the neck.

11*th.* No amelioration; same countenance and variable distortion of the mouth; less motion of the left arm and leg; constant agitation of the right limbs; answers as indistinct as on the 15th, but less loquacity; pulse 116, still firm; two liquid discharges; urine retained, a pint was drawn off by the catheter; blister discharges much serosity. Apply twelve large Italian leeches to the temples. In the afternoon the answers were rather more distinct, and the sight seemed less obscure; motion and sensibility as before.

12*th.* Stupor and some delirium during the night; countenance less flushed; left eyelids widely open, pupils dilated; sight gone, except at intervals, when he attempts to point out objects, but in a confused manner; answers very rare and doubtful; mouth more distorted, more constantly deviated to the right side; sensibility very obscure in the right side, nearly destroyed in the left; rigidity greater on both sides, but no permanent contraction, it is equally difficult to flex or to extend the limbs; no subsultus; pulse 116, rather less strong, but regular; respiration not stertorous, 16; diarrhœa, with two liquid stools. Twelve leeches were again applied to the temples. In the night respiration became for a time stertorous, but there were no convulsions.

On the 13th the pulse was too frequent to be counted; sight and hearing completely lost; same state of the pupils; no evidence of sensibility on pinching any part of the body; rigidity general; mouth a

little drawn to the right side; sweat abundant; secretion of urine continues, and still requires the catheter; deglutition very slow and difficult; no cries; the pulse became more feeble towards evening, and the patient expired during the night.

Autopsy, June 14th, at 10, A. M.—Exterior. Great emaciation; no œdema, or lividity; rigidity moderate; percussion of thorax sonorous in the whole anterior part of the right side, flat above and on the clavicle of the left, and rather less sonorous inferiorly than the right. On the posterior part of the chest percussion dull, at the upper part of both lungs, especially the left.

Head.—Longitudinal sinus empty; little blood on the exterior of dura mater. Arachnoid moist, but glutinous to the touch. Pia mater moderately injected, not infiltrated with serosity, and detached without tearing the cortical substance, which is of a light grayish-pink colour, and perfectly firm; medullary portion very moist, white, moderately dotted with red points. At the base of the brain there is very little serosity, but the arachnoid generally is semi-opaque and lactescent. The opacity is greatest around the commissure of the optic nerves, and upon the pons varolii, where it is rough to the touch, from the presence of numerous semi-transparent granulations, similar in size and appearance to those found in the lungs. The granulations are closely disseminated through this part of the membrane, which is white and opaque in the intermediate space. The granulations may be traced upon the anterior lobes of the cerebrum, and on each side to the fissure between it and the cerebellum. In the fissures of Sylvius and in the lateral fissures, the granulations are the most numerous, and are there surrounded by a yellow concrete substance, resisting pressure, and closely enclosing the vessels of the fissure. The cerebral substance immediately in contact with the last-mentioned masses, is rather softer than elsewhere, but of a light ashen colour. The cerebellum and pons varolii are firm and pale. Lateral ventricles distended by three or four ounces of limpid serosity; fornix and septum lucidum pale, softer than usual, but not pulpy. At the posterior extremity of the right lobe of the cerebrum, a yellow tubercle, as large as a small pea, was found in the pia mater. Spinal marrow not examined.

Thorax.—Both pleuræ united to the ribs by strong and close cellular adhesions, more firm on left than on the right side. *Left lung.* Upper lobe heavy, of a general dark colour, resisting pressure, but containing air at its anterior and inferior part. The pulmonary tissue is *filled* with an infinite number of semi-transparent, gray granulations, very equal in size, which in none exceeds that of a grain of millet.

right, pupils turned upwards, dilated, but regular; no strabismus; frequent grinding of the teeth; head thrown a little backwards; right arm in motion, grasping, as if at objects in the air; no evident rigidity, but resistance to efforts at flexing or extending all the limbs; sensibility on pinching, obscure generally, rather more on the left than the right side; intelligence almost destroyed, but he still answers to some questions, says he feels well; hearing very dull; sight doubtful; delirium constant; words distinct, but incoherent, moderately loud; no subsultus at the wrists; protrudes his tongue when directed to do so in a loud voice, it is whitish, but moist, and not turned to either side; deglutition easy, drinks eagerly, and takes a few spoonfuls of arrow-root; abdomen tympanitic, not tender; no stools, nor vomiting; urine discharged in the morning; pulse regular, of moderate volume and strength, 120 in the minute; respiration 16, rather high, not stertorous; cough and expectoration entirely suspended. Ten ounces of blood to be taken by cups from the head. Ice to the scalp after the cupping. The pulse did not falter after the cupping, and in the afternoon ten or twelve ounces more of blood were taken by leeches from the temples, and a large blister applied to the back of the neck.

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Head.—Longitudinal sinus empty; little blood on the exterior of dura mater. Arachnoid moist, but glutinous to the touch. Pia mater moderately injected, not infiltrated with serosity, and detached without tearing the cortical substance, which is of a light grayish-pink colour, and perfectly firm; medullary portion very moist, white, moderately dotted with red points. At the base of the brain there is very little serosity, but the arachnoid generally is semi-opaque and lactescent. The opacity is greatest around the commissure of the optic nerves, and upon the pons varolii, where it is rough to the touch, from the presence of numerous semi-transparent granulations, similar in size and appearance to those found in the lungs. The granulations are closely disseminated through this part of the membrane, which is white and opaque in the intermediate space. The granulations may be traced upon the anterior lobes of the cerebrum, and on each side to the fissure between it and the cerebellum. In the fissures of Sylvius and in the lateral fissures, the granulations are the most numerous, and are there surrounded by a yellow concrete substance, resisting pressure, and closely enclosing the vessels of the fissure. The cerebral substance immediately in contact with the last-mentioned masses, is rather softer than elsewhere, but of a light ashen colour. The cerebellum and pons varolii are firm and pale. Lateral ventricles distended by three or four ounces of limpid serosity; fornix and septum lucidum pale, softer than usual, but not pulpy. At the posterior extremity of the right lobe of the cerebrum, a yellow tubercle, as large as a small pea, was found in the pia mater. Spinal marrow not examined.

Thorax.—Both pleuræ united to the ribs by strong and close cellular adhesions, more firm on left than on the right side. *Left lung.* Upper lobe heavy, of a general dark colour, resisting pressure, but containing air at its anterior and inferior part. The pulmonary tissue is *filled* with an infinite number of semi-transparent, gray granulations, very equal in size, which in none exceeds that of a grain of millet.

The quantity of these granulations is so great at the summit of the lung, that they there compose the greater part of the pulmonary mass, and replace the cellular structure of the lung. The lower lobe contains numerous granulations similar to those of the upper lobe, more abundant at the superior than the lower part of the lobe. The pulmonary tissue is permeable, and not injected, but as in the other, is darker than usual, from the great quantity of black pulmonary matter. No large or yellow tubercles found. Bronchi containing a little florid blood, but their mucous membrane is pale and transparent. *Right lung.* Upper lobe nearly as full of granulations as the left, but not in its anterior edge, which is permeable to the air; in other respects it is similar. Middle and lower lobes dark-gray, soft, containing fewer granulations than the rest of the lungs. Bronchi pale, containing a little mucus. Bronchial glands dark-gray, firm, not tuberculous nor cretaceous. Pericardium contains from one to two ounces of yellowish serosity. Heart firm, dark-red, containing liquid blood and some coagula in the right side. Valves natural; aorta pale.

Abdomen.—Peritoneum without tubercles, containing an ounce or two of serosity. Stomach rather contracted, containing no liquid, but coated with a layer of very tenacious, white mucus. Mucous membrane mammillated throughout, offering numerous depressions, with no redness or thickening of their edges, the largest not exceeding a line in breadth. The depressions are formed throughout the stomach, except at the great tuberosity, and do not extend to the cellular coat. In the great tuberosity the membranes is grayish, smooth, of good consistence, not thickened or injected; in the rest of the stomach it is nearly double the usual thickness, brittle, but yields strips nearly of the usual length; the injection is bright, and dotted in the pyloric two-thirds.

Small intestine containing a little yellowish mucus; membrane pale and firm. Glands of Peyer scarcely visible except near the valve, where three of them are nearly a line in thickness, of a livid-red colour, and present from one to three rounded ulcers, with elevated perpendicular edges. Isolated follicles not visible. Mesenteric glands small, firm, not tuberculous.

Large intestine contains a little soft brownish mucus. The mucous membrane is no where injected, generally pale, not thickened; follicles not visible, consistence generally good, a little less than natural in the cœcum and ascending colon.

Liver rather smaller than usual, very hard, of a yellowish-brown colour, the two substance not distinct, not fatty or tuberculous, but

greenish. Spleen firm, dark brown, containing one or two cretaceous masses, not larger than peas. Kidneys firm, not tuberculous. Bladder distended with urine, but mucous membrane pale, and not tuberculous.

The preceding cases are the only examples which I have witnessed in America of the tuberculous meningitis of adults. The disease is not often found after the age of fifteen or sixteen years, but is very common in children when it forms one of the diseases classed under the term hydrocephalus. A number of cases were published in the Nos. of the American Journal for February and May, 1834, with an analysis of others, in all about forty. The evidence of the facts shows, that the fatal diseases of the brain and its membranes, which occur in children above the age of two years, were almost peculiar to tuberculous children, and with one or two exceptions, tuberculous matter was discovered in the membranes of the brain. Not a few cases of the same tuberculous meningitis have been observed in adults, especially such as were already attacked by pulmonary phthisis, but in such cases the lesion has nearly always been confounded with simple meningitis. More accurate observation, founded on the comparison of the pathological phenomena of children and adults, has shown the rare occurrence of idiopathic meningitis. At the base of the brain, the disease is rather frequent, but it seems peculiar, or nearly so, to tuberculous subjects. I have met with the disease three times in adults, who were all tuberculous; one of the three was admitted into the hospital for pulmonary consumption, and the cerebral disease occurred after his admission. In children, where my field for observation was larger, nearly forty dissections of meningitis were made, without finding a single exception to the law, that the meningitis at the base was never idiopathic.

The cases detailed by M. Andral, and in the work of Parent and Martinet, sometimes mention the existence of tubercles in the brain, or its membranes, as well as in the lungs. The observations of M. Andral do not always mention the absence of lesions in the organs least affected, but are confined to graphic descriptions of the alterations which attracted the attention of the observer. I refer to the earlier observations of M. Andral, who has since adopted a most accurate and thorough method of observation. The greater number of the observations of MM. Martinet and Parent Du Chatelet were not made by themselves, but are extracted from the notes of the internes of the French hospitals; they are consequently very incomplete. In the work of M. Louis on phthisis, examples are given of patients in whom the immediate cause of death was a lesion of the

membranes of the base of the brain; unfortunately, the attention of this admirable observer was not particularly directed to the cerebral lesions, and the description is less minute than could have been desired. In all the cases, or nearly in all, the disease of the membranes of the brain was regarded as an accidental complication of phthisis when the tubercles of the lungs were very numerous, but it was not considered analogous to the tuberculous lesions of other serous membranes. A more complete description of the lesion adds considerably to the knowledge we possess of the development of the tuberculous affections, and demonstrates the necessity of an accurate examination of all the organs. This necessity is not fully understood in the United States, and still less so in Great Britain.

The second and third cases in which the disease was most advanced, presented a lesion of the lungs, which is very common in the tuberculous meningitis of children. There were very numerous gray granulations equally developed, and scattered throughout the whole of both lungs. These granulations were not unlike in colour and size to those found at the base of the brain. The anatomical lesions of the brain itself were chiefly confined to the base; the cerebral substance immediately in contact with the yellow, concrete, tuberculous matter, was generally softened, but the arachnoid was dry, and in the second case there was not much fluid in the ventricles. The disease in adults, as in children, is totally independent of the accumulation of serosity, although it is most frequently termed hydrocephalus.

The diagnosis in the first case, which I witnessed only during the two days preceding death, was very obscure. The absence of paralysis, and of rigidity, until the last days of life, rendered it very probable, however, that the lesion was seated in the membranes. In the second case the symptoms were doubtful from some of them seeming peculiar to softening of the brain, and others indicating a tuberculous inflammation of the membranes. There was sudden retraction of the mouth, and imperfect paralysis in the contracted side, with confused intelligence, but not complete loss of motion, or of consciousness, on the other hand, the patient was scrofulous, was of a family in which tuberculous diseases were common, and had been long subject to head-ache, gradually increasing in intensity until the complete development of the disease. At the entrance of the patient, the subsultus tendinum, the floccitation, the countenance, and the frequent pulse, seemed to confirm the probability of tuberculous meningitis, but the great, and at first, the constant rigidity of one side of the body, indicated the existence of softening of the cere-

bral substance. The autopsy showed that the diagnosis was doubtful, because both the tuberculous meningitis and the softening had occurred during life.

The treatment in the first and second cases was antiphlogistic, but there was not in either case much prospect of saving the patient; the second was almost hopeless at the time of admission. When tuberculous meningitis is fully developed, it almost necessarily terminates in death; in this disease, as in the tuberculous affections of other organs, the skill of a physician consists rather in preventing the development of tubercles than in promoting their removal when once secreted.

The third case was on some accounts the most interesting, for the symptoms of the cerebral lesion commenced after the admission of the patient. It was received as a case of phthisis, and presented the usual symptoms of the disease, but the physical signs were doubtful, partly from the nature of the tuberculous lesion, and partly from the restless state of the patient, which rendered an accurate examination extremely difficult. The sound on percussion was clear on the anterior part of the chest, except at the left clavicle; the obscurity in the upper posterior part was doubtful, and the respiration was characterized only by the very imperfect vesicular sound. The signs were explained by the presence of the granulations without masses of tubercular matter in any part of the lungs. There was consequently no bronchial respiration, or flat sound on percussion. The conformation of the chest was that peculiar to phthisis; the depressions above and below the clavicles were much more evident than they usually are, especially on the side corresponding to the most diseased lung.

As soon as the symptoms of the disease of the brain supervened in this patient, the existence of tubercular meningitis was recognised, and little hope remained of saving the patient. The treatment adopted, was the local abstraction of blood to as large an extent as the patient could bear, with a blister to the back of the neck. Unfortunately, the result was as unfavourable as it usually is in the organic lesions of the brain; the cases terminated fatally, as those detailed in a former No. of the American Journal, which were observed at the Children's Hospital of Paris. Such results are, in the majority of cases, inevitable, and are sometimes ascribed by those ignorant of the true pathology of cerebral lesions to differences in the treatment, which is nearly equally fruitless in these grave diseases.

Case IV. *Cerebral Hæmorrhagy, Paralysis of the opposite side—Absorption of Coagulum and formation of Cellular Cyst.*—C. ——, a black, æt, 52, entered July 29th, 1834. He is a ship's cook; was

perfectly well during his voyage from Boston. Two or three days after his arrival, while at his work, became suddenly dizzy, fell upon the deck and vomited; lost his consciousness entirely for fifteen minutes, and did not perfectly recover himself until his arrival at the hospital the next day. At his entrance his skin was cold; no power of motion either in left arm or leg; face drawn towards the right side.

The loss of motion of the left arm and leg continued during the whole disease. Rigidity and contraction of the left arm and leg began two or three days after his entrance; at times there was a sensation of prickling or itching through the whole of the affected limbs, which was not constant; he has had no cephalalgia; hearing and sight always good; appetite excellent; bowels open nearly as often as in health; urine natural and perfectly voluntary; speech always a little difficult. The treatment was antiphlogistic, consisting in blood-letting; blisters constantly discharging from the back of the neck, and a succession of purgatives.

On the 26th of November slight general emaciation, extreme on the left side of the body; mouth a little drawn to the right side; right nostril more dilated than the left; eyelids equally open, pupils natural; left arm contracted, motionless, retaining only sufficient sensibility for him to feel a very smart pinch; rigidity very great; left leg extended, rigid, motionless, and nearly as insensible as the arm; sight, hearing, and taste seem natural; no cephalalgia; intelligence good; sleep natural; expression cheerful; deglutition easy; appetite and thirst natural; respiration 12 in the minute, performed chiefly by the muscles of the right side; pulse at 100, regular, rather full; nearly complete absence of venereal desires.

During the winter his pulse continued more frequent than natural; the rigidity and paralysis of the limbs of the left side continued without alteration; appetite good; stools rare, but promoted by the frequent administration of the milder purgatives.

Towards the end of the winter, ulcerations occurred upon the sacrum and left trochanter. These ulcers increased, notwithstanding every effort for diminishing pressure, and gradually extended to the whole surface beneath the sacrum and left ileum. The patient was gradually weakened, when the discharge from the sores became greater, and died on the 3d of May, in the last stage of emaciation.

The motion of the right arm and leg became more feeble during the last two months. In the early part of March, there were some convulsions on the right side of the body; from that time there was a little rigidity on this side, but never sufficient to prevent motion of these limbs.

Autopsy, May 4th, thirty hours after death.—Emaciation extreme; muscles very small and pale; no infiltration; over the sacrum, and extending to the hips, is a large grayish ulceration, denuding the projections of the bones; contraction of the left arm, and rigid extension of the other limbs.

Head.—Dura mater more adherent to the skull than usual, a little liquid blood in the longitudinal sinus. Arachnoid less moist than usual. Pia mater pale, moderately adherent to the brain. The cerebrum on the left side was pale, firm; the cortical substance firmer than usual, and of a light gray colour; the medullary not injected. Central parts firm and pale; a drachm of limpid serosity in each ventricle. The right hemisphere in colour and consistence was similar to the left in its upper part. On a level with the ventricles, half an inch to the right of the corpus striatum, there was a whitish cellular mass, an inch and a quarter in length, a third of an inch in breadth, and at least an inch in depth; the mass adhered closely to the substance of the brain, was composed of irregular laminæ adhering together, but no liquid could be detected in the interstices between them. The cerebral substance around this mass in the breadth of an inch on either side, including the corpus striatum, was evidently softer than the rest of the cerebrum, but not pulpy; the softened medullary portion was tinged with yellow. Cerebrum pale and firm; the crura of the cerebrum were each a little softened at their origin. Pons varolii and medulla oblongata pale and firm.

Medulla spinalis pale, and of perfect consistence.

Neck.—Pharynx and œsophagus pale; larynx and trachea pale, not ulcerated.

Thorax.—Slight cellular adhesions at the lateral part of the left lung and near the summit of the right. *Right lung.* Its upper lobe is gray, soft, rather more crepitant than usual, especially along the anterior margin, where the vesicles are at least three times the usual size. At the part corresponding to the adhesions, near the surface, and around the large bronchi, the tissue of the lung is of a dusky red colour, not aerated, easily crushed; when cut, it offers a multitude of very minute, yellowish granulations, less hard and smaller than the ordinary gray granulations; when pressed, it yields a purulent liquid, which issues in part from the orifices of the incised bronchus, but is partly expressed from the pulmonary tissue. The lower lobe is soft, and contains little serosity. No tubercles in any part of the lung. Left lung grayish, soft, containing little serosity; the vesicles along the anterior margin are a little larger than usual, but there are neither tubercles nor granulations. Bronchi pale, trans-

parent, not dilated. Bronchial glands small and black. Pericardium containing a little limpid serosity *Heart* of moderate size, firm, dark red; valves flexible; walls of left ventricles of average thickness.

Abdomen.—Stomach not distended, containing little liquid. Mucous membrane of a general slate colour, less marked near the cardia than elsewhere, thickness and consistence natural in the cardiac two-thirds of it; strips more than an inch long in the small curvature; six to eight lines on the faces; in the third nearest the pylorus the membrane is thickened, mammillated, of a dark slate colour. In the small curvature, about an inch from the pylorus, are five ulcerations, one linear an inch in length, a third of an inch in breadth, edge red, the base nearly pale, formed by the submucous cellular substance; the ulcerations have abrupt, elevated, dark red edges; the mucous membrane around them is of a darker colour than elsewhere, but not highly injected, and not altered in consistence. At this portion of the stomach the thickness of the muscular coat was nearly a line, it was very hard, and of a pearly colour; the cellular was also hardened, and nearly as thick as the muscular coat; the thickening extended to an inch and a half or two inches from the pylorus.

The *small intestine* is much contracted, pale externally, and in its mucous membrane, which is thin, rather more adherent than natural, but not softened. Glands of Peyer pale, little developed. Isolated follicles scarcely visible. Glands of the mesentery small and firm.

Large intestine contracted, containing some hardened fæcal matter; mucous membrane throughout pale, thin, but firm.

Liver firm, brownish. Spleen small and firm. Kidneys and bladder natural. The other viscera presented no appreciable lesion.

Case V. which is confined to a detail of the anatomical lesion, is interesting only from the sudden termination. It is much more rare than is generally supposed, for cases of cerebral hæmorrhagy to terminate thus suddenly. The large effusion of blood, and the compression of the fluid contained in the ventricles upon both hemispheres, explain the speedy approach of death.

C. ——, an insane patient, has resided at the Pennsylvania Hospital for the last twelve years. He had long been in a state of dementia, but was tranquil; strength and appetite natural. He dined heartily on the 28th of September, 1834, and was perfectly well at half past one; he was left by the attendant in a room with other tranquil patients, and was found by him, on his return, an hour afterwards, lying on the floor. Beside him there was the matter vomited, consisting of the food swallowed just before. The body was warm;

no remains of sensibility; face swollen and livid. Rubefacients were applied to the limbs without success.

Autopsy, September 29th, nineteen hours after death.—Exterior. Lividity of the face, neck, and posterior part of the body. Moderate corpulency. Strong rigidity of all the limbs.

Head.—Much fluid blood ran from the incised scalp. Liquid blood in the longitudinal sinus. Glands of Pacchioni much developed. Little liquid in the arachnoid. Cortical substance rather flattened; vessels of the pia mater very moderately injected. Obscure fluctuation at the summit of both hemispheres. Cortical substance rosy; medullary a little dotted with blood, consistence good. About three quarters of an inch above the left corpus striatum, a large black coagulum was discovered as large as a goose's egg; it extended downwards to the fissure of Sylvius, in which were some small, black clots, and reached to an inch and a half from the anterior extremity of the brain. The coagulum communicated with the left ventricle by a fissure, half an inch long, above the thalamus of the optic nerves, and also through the posterior part of the corpus striatum, which was lacerated to the length of nearly an inch. The cerebral substance around the coagulum was reddish to the depth of an eighth of an inch, but the redness was general, like that of imbibition, and was not accompanied by any increased development of vessels. The consistence was a little diminished in the reddened part, elsewhere it was perfect. The optic thalamus was of good consistence, but the corpus striatum was pulpy, of a dark livid gray colour, with little black clots scattered through its substance. Right hemisphere was throughout firm, moderately injected, of perfect consistence, except the corpus striatum, which was softened and nearly pulpy. Ventricles distended by at least four ounces of thin liquid blood. Central parts a little softened. The brain at its base was firm, and very moderately injected. Cerebellum of moderate consistence, not injected.

Abdomen.—Stomach distended by the remains of bread, meat, and vegetables; mucous membrane lined by a whitish, pulpy coat, of a general and beautiful rosy tinge, from a multitude of red points and fine vascular ramifications. Consistence perfect, and thickness apparently normal. The duodenum and upper third of the small intestine are filled with the same milky liquid; mucous membrane of similar colour to that of the stomach, but less vivid. In the lower two-thirds of the small intestine there is a greenish-yellow liquid, tinging the membrane, which is not injected. Glands of Peyer pale, slightly developed. Glands of Brunner distinct. Mesenteric glands

corresponding to the upper third of the intestine, are of a milky whiteness; when incised, a whitish liquid exudes from them; the others are pale and firm. Lacteals not noted. Large intestines containing much fæcal matter; membrane pale and firm.

Case VI. *Acute Softening of the Brain, particularly of the Left Hemisphere—Rigidity and Paralysis at first of the Right Limbs, afterwards of both—Delirium.*—A black, aged twenty-three years, entered the Pennsylvania Hospital on the 26th of March, 1834. He has lived for the last four years in the same family as a domestic; has enjoyed excellent health, and is addicted to no excesses. The only illness was an attack of slight rheumatism a few months since. He married four weeks before his admission. A fortnight after his marriage, on the day following a visit to his wife, he complained of a numbness of the right hand. He ascribed this sensation to lying upon his hand at night, but consulted a physician, who directed some stimulating liniments. After a week he regained the entire use of his hand, and continued well for another week, with the exception of a little dullness of mind, which was remarked from the beginning. On the morning of the 24th, the day after visiting his wife, the numbness of the hand returned, with greater difficulty of motion. He was bled, and admitted into the hospital on the 26th. Three or four days after his entrance, the motion of the right leg was difficult, as well as of the arm; but he walked until the 2d of April. Intelligence confused, lost entirely about the same date; no violent delirium or cephalalgia, or intolerance of light, and no sudden loss of consciousness; vomiting not observed. He was bled twice, and cupped as often, with the frequent administration of purgatives. I saw the patient for the first time on the 2d of April, when no symptom other than those mentioned, was noticed. The case was not noted until the 4th.

April 4th, at noon.—Height middle; rather thin than corpulent; is seated and keeps himself erect; expression of countenance wild; pupils natural, eyelids equally opened, look fixed; mouth deviated a little towards the left side and downwards; frequent sardonic grinning; motion and sensibility of the left arm and leg natural, but nearly perfect loss of motion of the right leg, and complete immobility of the arm; loss of sensibility in the right arm, and diminution in the leg; rigidity evident at the right elbow only; speech scarcely articulate; great dullness of intellect, but he makes efforts to answer questions; swallows when food or drink is put to his mouth; muttering delirium at intervals; sleep disturbed; tongue natural, not deviated; anorexia; thirst doubtful; no dejections; heat nearly natural

no cough; pulse 88, regular, respiration 16. Six cups to the head. Infusion of senna and sulphate of magnesia. In the evening the pulse was at 100, intermittent. No other change.

5th. More delirium during the night; attempted to rise, and fell to the ground; delirium constant, but still seems to recognise his wife; complete paralysis of right arm and leg; rigidity doubtful; deglutition more doubtful; one stool; no priapism; pulse 100, regular. Aloes and jalap, āā. gr. v. In the evening pulse 85, regular.

6th. More noisy delirium; inarticulate cries; idiotic expression of the countenance, but slight deviation to the left side; eyelids and pupils natural; same paralysis, but greater rigidity of the right arm, and a little of the right leg; a little loss of motion on the left side; deglutition very difficult; no answers; pulse 80, a little irregular. During the day the right arm became flexed permanently, with great resistance when efforts were made to extend it. Pulse intermittent in the evening, 80; no heat of skin.

On the 7th, great rigidity of all the articulations of the right arm and hand, with permanent flexion of the elbow and wrist; doubtful rigidity on the left side; great stupor; pulse 80 to 90, a little intermittent. In the afternoon spasmodic tremor of all the limbs, more evident in the right than the left; the tremor lasted nearly a quarter of an hour. Afterwards increase of feebleness; answers still more difficult; rigidity evident in all the limbs, except the left leg; in the left arm it was without contraction; urine voluntary; stools after a purge of senna.

On the 8th, both arms were firmly crossed on the breast, and required strong efforts to extend them; the contraction exists also in the fingers; rigidity, without contraction of the inferior extremities; sensibility generally very obtuse; muttering delirium; slow, difficult deglutition; sardonic cough; respiration very stertorous; pulse 120, smaller.

9th. Profound coma; rigidity of limbs, and insensibility nearly equal on both sides; pupils natural; deglutition lost. Death at 6, P. M.

Autopsy, April 10th, seventeen hours after death.—Exterior. Moderate embonpoint; no infiltration; rigidity very great in all the limbs; arms flexed. Blood exterior to the dura mater rather abundant, but little in the longitudinal sinus. Glands of Pacchioni not visible. Arachnoid rather dry, no serosity beneath it. Pia mater moderately injected, except the large veins, which are distended. Cortical substance of the upper part of both hemispheres much injected. On the left side, the cortical substance adjacent to the longitudinal sinus, is much more deeply injected than elsewhere, of a reddish-brown colour,

decidedly softened, but not pulpy. The softened portion begins at the anterior extremity of the cerebrum, and extends to two-thirds of its length, in the breadth of an inch, or rather more. The medullary substance immediately below the cortical is also softened, but in a less degree, and brightly injected, with a general yellow tinge; there is no distinct line of separation between the softened part and the contiguous cerebral substance. At the centre of the left hemisphere, there is a yellow softening, which is converted into a cavity, the size of a filbert, by gently scraping it with a scalpel. In the rest of the hemisphere the cortical substance is of a brighter red than usual; the medullary much injected. *Right hemisphere.* Cortical substance of summit injected, but less than in left side. The anterior and upper fourth of the cerebrum presents three softened portions, reduced to a pulp by gentle scraping, separated from each other by firmer cerebral substance. One of these softenings is at the anterior extremity; another just behind it on the great fissure, is an inch and a half in length, but rather less in breadth, and the third a little to the right of the other two, is smaller, and confined to the cerebral substance. The softened cortical substance is reddish-brown; the medullary yellowish; the rest of the hemisphere is firm, but more injected than usual. Each of the lateral ventricles contains one drachm of limpid serosity. Plexus choroides injected. Fornix and septum lucidum firm and pale. Left corpus striatum injected, and a little softened; right firmer and less injected. Optic thalami firm, slightly injected. At the base of the brain there was an ounce to an ounce and a half of serosity. Pia mater less injected than at the summit. No alterations in the fissures of Sylvius. Cerebellum firm, moderately injected. Pons varolii and medulla oblongata firm. Spinal marrow moderately injected, firm; cortical substance rose-coloured.

Thorax.—Right lung, a few old cellular adhesions at its inferior and lateral portions. Engorgement at its posterior inferior part only; elsewhere tissue not congested, and permeable to the air. No tubercles, or granulations, or emphysema. Bronchi not thickened, violet coloured, containing a little mucus. *Left lung.* Lower lobe dark brown, containing much reddish serosity, and but little air, friable, but not granulated. Upper lobe contains less blood. Bronchi livid, not thickened. Pericardium offers little serosity. Ventricles of the usual thickness, containing a little fluid blood, firm.

Abdomen.—Stomach contains a little brown mucus; injection of the large vessels of the great tuberosity, and a few spots of ecchymosed blood along the large curvature, where the membrane is thinner in irregular spots and longitudinal bands than elsewhere. Pos-

terior face slate-coloured, with bright punctuated redness, thickened, consistence diminished. On the anterior face there were pale, longitudinal bands, with thinning of the mucous membrane, which was yellowish in the intervening spaces, and softened slightly.

Small intestine not distended, containing a greenish mucus in the ileum. Mucous membrane firm, not injected. Glands of Peyer pale, scarcely visible, not elevated. Mesenteric glands firm and grayish.

Large intestine moderately distended, containing a little hardened fæces; mucous coat firm, and not injected.

Liver dark brown, firm, two substances distinct. Dark bile in the gall-bladder. Spleen firm, four or five inches in length. Kidneys firm, not granulated.

Observations of inflammatory softening of the brain are not so common as to deprive details of interest. Obscure cases are indeed only useful when published with sufficient details to give them a distinctive character, which must be done by stating many negative facts, describing the healthy state of the greater part of the viscera. The present case resembled in no respect cerebral hæmorrhage, but might have been confounded with tuberculous meningitis. The peculiar features in the case were the slow increase of the palsy, which at first seemed totally unconnected with a lesion of the brain; the rigidity of the muscles, and the character of the delirium, which nearly resembled mania. The slight symptom of numbness in one arm, without an assignable cause, proved of vast importance, and seemed to coïncide with the earliest stage of the disease. It was impossible to ascertain whether the sensation of prickling or formication was felt at the same time as the numbness. The strong, permanent rigidity, which constitutes the pathognomonic character of softening of the brain, was well exemplified in this case. As soon as this symptom was recognised, the diagnosis was evident; but at the advanced stage of the disease, it is much less useful than at its commencement, when there is still a prospect of saving the patient. Although it would have been scarcely possible to affirm the existence of softening of the brain from simple numbness of an arm, with dullness of intellect, there is always in such cases a reasonable ground for suspecting that a grave lesion is taking place. Neither apoplexy, meningitis, nor chronic tumours of the brain offer similar symptoms, but they are commonly observed in softening of the brain. The difficulty of the diagnosis was in this case increased by the complete cessation of the numbness, although the intelligence was always duller than natural. Very little fever was observed at any time; the pulse was not very frequent, and at times was irregular.

The lesion of the brain occurred at the anterior and upper part; a portion of the cerebral mass, supposed to be especially connected with the development of the intellect. There was also a lesion of one of the corpora striata, and another in the centre of the left hemisphere. The symptoms corresponded with the lesions; there was a diminished power of motion and numbness of the right arm from the beginning, with enfeebled intellect during the whole course of the disease. As the disease advanced, the left arm lost its power of motion, and the rigidity gradually extended to all the limbs. The lesion on the right side of the cerebrum corresponded to the palsy on the left side of the body, was less advanced than that of the left hemisphere, and probably began at a later period. The injection of the cerebral substance around the softening, and the acute nature of the symptoms, show clearly enough that the disease was of the inflammatory form. The symptoms were not, however, of such a nature as to give rise to fears at the early period of the disease; for softening of the brain, even when most acute, is an obscure disease. The diagnosis was not certain until the occurrence of the decided rigidity, which constitutes one of the best pathognomonic signs of cerebral softening. The character of the rigidity differed from that observed in the cases of tuberculous meningitis, (I. II. III.) it was more intense and constant, in the latter stages amounting to permanent flexion of the upper extremities, and extension of the lower.

The treatment followed at the hospital was such as offered the best chances of success. Frequent depletion, both general and local, with purging and blisters to the neck, were the principal remedies. It is questionable whether greater success would have attended their use, had the disease been recognised at a very early stage; for softening of the brain is a disease almost necessarily fatal. M. Rostan regards the disease as incurable; but his observations were confined to the softening of the brain in aged subjects. This variety does not seem to be of an inflammatory nature.

As an interesting complement to the case of softening of the brain, I will add one of softening of the spinal marrow, which I observed at the Children's Hospital of Paris.

Case VII. *Softening of the Medulla Oblongata and the Spinal Marrow, chiefly of its Posterior portion—Normal state of Brain and other Viscera—Intellect Preserved—Strong Contraction and Rigidity of the Limbs—Sensibility Increased.*—Josephine, aged ten years, entered October 13th, 1833. (Service of M. Bonneau.) She was born at Paris, of healthy parents, and is the second of nine children. Four of them are dead; one perished at the age of six months, the

others at that of two to three years, all in strong convulsions. The other children are healthy.* No other relatives were known to have had convulsions. The little girl was at her boarding school on the 6th of October, in perfect health. In the evening she was taken with pain in the limbs, and feeling of lassitude, slight chill, but no pain in the head or back. On the morning of the 7th she rose as usual, but her walk was difficult and tottering. Anorexia, thirst, and vomiting of white glairy liquid; constipation, and pains in the back.

On the 8th she lost all power of motion in both arms and legs, but without rigidity. No cephalalgia, but acute pain in the legs, and increase of the pain in the back. Since the 8th, she has kept her bed, but has no pain, except in the legs, where it is chiefly caused by efforts to extend them. Slight fever.

Treatment.—Two baths daily. Burrage tea; enemata. No bloodletting nor blister.

Present state.—October 16th, 2, P. M. Complexion blond, with light hair; eyes gray, not injected; moderate embonpoint; countenance rather pale, not distorted, not expressing pain; intelligence much developed; mind clear; answers precise, voice firm; no headache, dizziness, or tinnitus aurium; motion of the head limited to a slight rotation and balancing; she can neither raise it up, nor hinder it from sinking; paralysis of the arms, with complete muscular relaxation, but not diminished sensibility. She can still bend the wrists and fingers a little, but cannot extend them; the motion is rather greater on the right side than the left; muscular paralysis of the lower extremities complete on the left side; slight motion preserved at the right toes and instep; sensibility at least as great as usual; doubtful rigidity, but frequent pains in the legs, especially when they are moved; no formication or prickling in the limbs; spine not deviated; pressure upon the spinal processes from the shoulder to the sacrum, gives extreme pain; occasional pains felt between the shoulders, and in the left axilla; skin warm, but moist; sleep natural; voice natural, breath rather short when speaking; deglutition easy; anorexia, thirst; no dejections; abdomen not tender, nor distended; pulse 124, feeble, regular; respiration 44, high; no cough; percussion anteriorly sonorous on both sides of the chest; auscultation impracticable.

* One of them entered the hospital in November, with strong rigidity and contraction of the limbs, (previously, analogous symptoms to those of her sister.) The disease had not changed at the end of a fortnight, when her parents removed her.

17*th.* Pains in the shoulders; no change in motion or sensibility; hardened lumps felt in the left iliac region. R. Potion, containing an ounce of castor oil, and one of olive oil. Mucilaginous injection. R. Pulv. Dover. gr. vj.

18*th.* Sleep bad; intellect and senses natural; countenance rather more injected, not distorted; great exhaustion; almost constant drowsiness; no rigidity nor convulsions; sensibility obtuse in all the limbs, equally on both sides of the body; muscular paralysis; dyspnœa considerable, speech interrupted; respiration more difficult, 48; pulse feeble, from 100 to 120; heat natural; tongue grayish, violet red at the tip, not deviated; four voluntary dejections; urine voluntary. Increase of dyspnœa towards evening, becoming extreme at midnight; shortly before her death.

Autopsy 19*th, ten hours after death.—Exterior.* Moderate embonpoint; lividity of dependent parts of body moderate; no infiltration. Skeleton well-formed. Strong rigidity of all the limbs.

*Spine.**—No blood on the exterior of the dura mater. About two drachms of serosity at lower part of arachnoid. The exterior of the spinal marrow was of the ordinary aspect, except in the three inches immediately below the cervical enlargement, where it is alternately shrivelled and enlarged; inferiorly it is smooth and polished. No injection either of the pia mater or arachnoid. Medulla oblongata firm, except a small softening the size of a large pea; two lines below the annular protuberance, in the median line, and near the junction of the corpora olivaria and restiformia. The softened portion is yellowish, dotted with red points; the surrounding portion is firm, and not injected like the rest of the medulla oblongata. The spinal marrow is softened from the end of the medulla oblongata to the distance of three inches from its lower end. In the upper third of this extent the softening is confined to the posterior half, and is especially evident at the sides of the middle fissure The middle part of the medulla, from the place described to the three inches above its termination, is of a greenish-yellow colour, a little dotted with minute red points, and of pulpy softness, perceptible even on feeling it externally. The inferior portion in the extent of three inches is firm, pale, and smooth.

Head.—Blood moderately abundant on the exterior of the dura mater. Black liquid blood in the longitudinal and lateral sinus. Arachnoid moist, very little serosity beneath it. Pia mater injected

* The spinous processes were removed with great caution by Charriére's double saw—an admirable instrument for the purpose.

in its large vessels only, easily detached from the convolutions. One or two spoonfuls of transparent serosity at the base of the brain. Cortical substance dark violet, medullary much dotted with blood, but the consistence of the brain is every where good. A table-spoonful and a half of limpid serosity in the two ventricles. Cerebellum firm, of the same violet tint as the brain. Annular protuberance firm, not much injected.

Thorax.—Both lungs adhere to the pleuræ by firm and close adhesions. Tissue gorged with blood, especially in the lower lobes, which are less firm than natural. No trace of tubercles or gray granulations in the lungs or bronchial glands. Heart firm, of the usual aspect, containing much black blood. Larynx and trachea pale.

Abdomen.—Liver engorged with blood. Intestinal canal from the cardia to the rectum, without appreciable lesion either in thickness or consistence. Stomach of a general rose-colour, and intestines pale. Some hardened fæces in the colon. Agglomerated and isolated follicles of the small intestine normal.

Remarks.—This case contrasts very strongly with the preceding, from the entire integrity of the mental faculties, and the important alterations of the function of locomotion, and afterwards of the sensibility. The power of motion was diminished at a much earlier date than the sensibility, although the lesion was more advanced on the posterior than the anterior face of the spinal marrow. It is true, that the part of the marrow where the disease was most conspicuous, presented a lesion extending to the whole of its diameter. The precise state of the sensibility is determined with great difficulty in children, on account of their restlessness and inattention, which indispose them for the minute examination necessary. In the early stage it seemed nearly natural, perhaps increased; towards the end of the disease it became obtuse. The contraction of the muscles is of usual occurrence in softening of the nervous centres; it extended to all those which are supplied with spinal nerves, but did not exist in those of the face, nor of the respiration. As soon as the disease extended to the nerves of respiration, the patient died suffocated. It should be observed, that the intelligence which chanced to be unusually developed, was not in the least impaired during the course of the disease, nor was there much evidence of suffering, except when the muscular contraction was forcibly removed.

The cause of the softening was unknown; the child could ascribe it to none; it is probable that it was not of an accidental nature, for her sister was afterwards admitted with symptoms identical to those of our patient, but of much longer duration, and not terminated

when she left the hospital. There was also a strong tendency in the other children to convulsive diseases. Besides the sister, who probably died, two other children were admitted into the hospital during the same year, (1833,) with contraction of the muscles and partial paralysis; these cases were regarded as examples of a similar affection of the spine.

At the entrance of the patient, there was scarcely a chance of saving her by any mode of treatment. The method adopted was not of the active kind preferred in England and in this country. The treatment of diseases regarded as incurable is extremely simple in the French hospitals; it is limited to such palliative means as do not aggravate the suffering of the patient. The method pursued in this case was in accordance with the more common usage, and was, therefore, merely directed to obviate some unpleasant symptoms.

I have given nearly all the cases of cerebral disease, (excepting insanity,) which terminated fatally during the last eighteen months of my residence at the Pennsylvania Hospital. The remaining cases are two in number. One was meningeal apoplexy, occurring in an insane patient, and offering some anatomical interest; the second case presented cerebral symptoms, without appreciable lesion of the brain. The limit of this article will prevent the publication of either of these cases.

A number of cases of paralysis were admitted and discharged from the hospital. Some were cured, others relieved, but in several cases no amelioration occurred. Three of these cases, which offered no distortion of the countenance, or lesion of the cerebral functions, probably depended on an affection of the spinal marrow. The others were ordinary cases of hemiphlegia, dependent upon cerebral apoplexy. The treatment pursued is so universally adopted, that it is unnecessary to repeat it. The strychnia was used in eight cases; in two of the eight its use was discontinued before any appreciable effect was produced. In the six others, severe spasms most strongly felt in the paralyzed limbs, obliged us to suspend the medicine from time to time. Much suffering was caused by the spasms, which were generally accompanied by a sensation of constriction and uneasiness at the epigastrium. The dose at which the strychnia was given, was one-eighth of a grain three times daily; the pure crystallized strychnia always acted with great energy at that dose; but the impure medicine at first used in the hospital, produced no appreciable effect until the quantity given was a grain to a grain and a half, thrice daily. The preparation selected, should always be the crystallized strychnia, and the commencing dose a twelfth of a grain.

ART. II. *Reports of Five Cases of Ununited Fractures Treated in the Pennsylvania Hospital, with Observations.* By T. S. KIRKBRIDE, M. D. Late Resident Physician.

CASE I. *Ununited Fracture of the Femur, near its middle—Excision of the Ends of the Bone—Cure.*—John M'C. æt. 26, was admitted into the Pennsylvania Hospital on the 30th of February, 1833. He was a native of Ireland, and had been nearly five years in this country; had generally enjoyed good health, though much afflicted with intermittent fever for some months after his arrival. In 1828 he had two or three of his ribs broken, and in 1830 an arm, all of which united in the usual period. On the 6th of July, 1832, he was crushed by the falling of a bank of earth, six and a half feet high, which fractured both thighs, near their middle—the right leg just below the knee and the right patella. There was in addition, an extensive wound of the perineum. A bandage was applied to each limb; splints not more than a foot long to each thigh, and the injured leg merely kept at rest upon pillows. The limbs were examined at the end of three weeks, and the same dressings reäpplied and suffered to remain till the 1st of November. When removed, the left femur was found to have united with great deformity, the ends of the bone overlapping, and the limb shortened two inches—the patella and the tibia were also firm, but no union in the right femur.

Despairing of relief from the treatment adopted, he entered the hospital as above. The right limb was then one inch shorter than the left—the fragments of bone were moveable, and were not in contact, a large portion of callus had been thrown out about the seat of injury, and appeared to prevent their approximation, and rendered the deformity very striking. His knee had scarce any motion in it at the time of his admission. Up to this period he had been constantly in bed, and although he had suffered materially from his long confinement, his health was then tolerably good.

The operation was performed by Dr. T. HARRIS, under whose care he was admitted, assisted by the medical officers of the house, and in presence of a large number of physicians and students, on the 23d of March. After making the proper incisions, and fully exposing the part, it was found necessary to remove a large portion of new bone, that had been deposited in the part, and which added materially to the difficulty of the operation; this done—the end of each fragment was excised by means of the chain saw, and the two ends were then readily brought into apposition—the edges of the wound

were approximated, the limb placed in Hartshorne's modification of Boyer's splints for fracture of the femur, and the parts covered with a poultice. The operation was tedious and painful, but was borne admirably by the patient. The same apparatus was employed three months, and afterwards a piece of firm pasteboard, moistened and moulded upon the sound limb, so as to include all the upper portion of the thigh, was applied, and which being well padded, answered a very good purpose in keeping the parts at rest. The ulceration had entirely healed by the 1st of November. Early in December there was an appreciable stiffening in the limb; soon after he was directed to leave his bed, and commenced walking with crutches, the thigh being protected by the splint. From this time his health improved constantly, and the firmness of the limb increased slowly, but steadily, so that by the 1st of May, 1834, he was discharged for the purpose of going into the country. During the progress of the cure, he had eight or nine attacks of erysipelas, some of them attended with much fever and constitutional disturbance. No bone was ever discharged from the wound.

September 12th, 1834.—The patient called at the hospital to-day. He enjoys good health; has regained his flesh and strength; his limb feels perfectly firm, but less strong than the other; he only uses a cane in walking. A cork sole, one inch high, makes the length of the two limbs correspond; there is rather more motion of the knee than when he left the hospital; he has had but one slight attack of erysipelas since that time.

Case II. *Ununited Fracture of both bones of the Forearm—Excision of the ends of the bones, with partial Success—Subsequent Formation of the same state of Parts—Application of the Seton—Perfect Recovery.*—Soloman M'D. æt. 24, was admitted into the hospital on the 14th of April, 1833. He is a shoemaker, and generally healthy. He gives the following history of his case. In August, 1832, he was engaged about a water-wheel in the interior of Pennsylvania, and by its unexpected starting both forearms were fractured in two or three places; in the left, the middle fracture was a compound one, the bones projecting through his coat more than an inch. The right arm was retained in splints during two months; union took place, and it gradually regained its strength. Splints were never applied to the left, but it was kept at rest upon a pillow for nearly six months, while various measures were resorted to, to remove the inflammation, &c. At this period he commenced walking; the upper and lower fractures had united with considerable deformity, but in the middle one no union had taken place; the wound was nearly healed; several

spiculæ of bone had been discharged, but no large fragments. Upon his admission, he had nearly recovered his health, and had walked a distance of one hundred and fifty miles; his arm was useless; the line of direction, both of the radius and ulna, was so much altered, and the fragments had passed each other so far, that neither friction nor the seton could be resorted to. The operation of Mr. White was, therefore, performed by Dr. T. Harris on the 24th of April; the ends of both bones were turned out and excised, so that upon replacing them, they were accurately in apposition. The callus thrown out between the bones, and in some measure uniting them, rendered the operation rather tedious and painful.

The arm was kept in a carved splint, and the patient directed to take exercise in the open air. Occasionally from an increase in the inflammation about the parts, or from attacks of erysipelas, it was necessary to remove all dressings from the arm, and merely keep it quiet upon a pillow. The operation would probably have been entirely successful, had not the patient become dissatisfied, and insisted upon being discharged from the hospital on the 13th of November.

Seven or eight weeks before this, the ulna had united perfectly, so that he was able to raise his arm; the ends of the radius were in contact, and pressure or the application of caustic, which was contemplated, would have been likely to have produced an union.

After leaving the house, he was employed as a drover, still keeping on the splints which he had used in the hospital. Early in July, 1834, he fell from a fence, breaking up the newly-formed callus, and suffered much pain for some time afterwards. On the 29th of October, he was again admitted into the hospital, the portions of the radius and ulna perfectly moveable, and appearing to have their ends rounded off, from the motion to which they had been subjected. As the fragments now corresponded with each other, it was determined to employ the seton, and accordingly a portion of a skein of silk was introduced between each of the ununited fractures by Dr. Harris, on the 2d of November.

November 6th.—The patient suffered much pain after the operation, and had fever; he is now comfortable, and pus is discharging from the wound; he had indications of erysipelas on the 4th, which were promptly removed by the application of forty leeches.

December 18th.—Some stiffening of the radius, none in the ulna; the ulceration is diminishing; he carries his arm in a tin box, and enjoys tolerable health.

January 8th, 1835.—Some difficulty was experienced in keeping

the ends of the ulna in apposition, this however was remedied by the use of compresses and a roller; there is now no disposition to displacement, and evident stiffening in the ulna, as well as in the radius

19*th.* The patient's health has not been good for two weeks past; he has a pallid appearance, and complains of loss of strength; he has had but little appetite; coughs and has diarrhœa; the bones have not become any firmer since his indisposition. He has been upon a good diet, and allowed porter.

24*th.* The diarrhœa has been relieved; he uses a milk and farinaceous diet, and mild tonics; still has cough.

30*th.* The patient had an attack of hæmoptysis yesterday, preceded by a sensation of fullness in the chest, and an unusually troublesome hacking cough. He lost half a pint of blood, and is now much prostrated; pulse feeble; skin cool; some cough; pallid, anxious countenance. Dry cups have been repeatedly applied to the chest, and he uses a solution of morphia, pro re nata.

February 6*th.*—Much better; less cough; no uneasiness in the chest; pulse stronger; the radius appears less firm than it did two weeks ago.

After the date of the last report, the patient had another attack of hæmoptysis, and was once or twice troubled with diarrhœa; from these, however, he soon recovered, and although he had lost much flesh and strength, his appetite returned, the bones became more firm, and on the 27th of May he was sent to the country. Both bones had united, and for many days he had ceased to wear splints of any kind. The last seton was removed nearly three weeks before he was discharged.

Case III. *Ununited fracture of the Humerus near its neck—Cure by the Seton.*—John E. æt. 24, mill-wright, from Chester County, was admitted into the hospital with an ununited fracture of the right humerus, on the 10th of May, 1834. He gave the following history of his case:—On the 25th of February, 1833, he was thrown from the top of a car on the Little Schuylkill Rail Road, by coming in contact with a bridge, under which the carriage was passing. His right humerus was fractured obliquely, just below the head of the bone, and both bones of the forearm, midway between the wrist and elbow; splints were placed upon the arm, and it secured to the body by means of a roller; the forearm he carried in a box padded with cotton. In two months he was able to use the forearm. The splints were kept upon the arm for six months; they were then removed, as the fracture was supposed to have united. He was never able to use it, however, and in January, 1834, met with a person, who discover-

ing that he had ununited fracture, proposed the use of a seton, which was accordingly tried, but finding no union at the end of eight weeks it was removed. Nothing further was done till he entered the hospital.

From an examination of the cicatrices upon the arm, it was evident that the seton had been merely passed under the integuments, and at least an inch below the edges of the separated bone.

The patient is robust, and has always enjoyed good health; he drinks moderately when at work; upon his admission he was unable to use the arm; the fragments were easily moved in different directions, and appeared to have a connexion purely ligamentous. The operation was performed by Dr. T. Harris on the 17th of May. After making an incision down to the part, he used a strong-pointed steel instrument, with a firm handle, for perforating the ligament, and then passed a portion of a skein of silk between the fragments, by means of a long seton needle. The operation was speedily done, and no difficulty occurred except in securing one or two vessels at the bottom of the outer incision.

18*th.* There was considerable oozing of blood from the wound last evening; none to-day; has some pain and fever; bowels not open. R. Magnes. sulph. ℥ss.

22*d.* Doing well; no fever and but little pain; suppuration has commenced, and the seton is moved daily; appetite not good; bowels regular. Poultice continued to the arm.

23*d.* Had a chill last evening, followed by fever and nausea, and was directed to take mass. ex. hyd. gr. v., to be followed by a Seidlitz powder in the morning. To-day has erysipelas in the arm; pulse quick; skin warm; tongue furred. R. Mist. neutral, ℥ss. q. 2 h. Cold mucilage to the inflamed skin.

24*th.* Erysipelas extending; fever and coated tongue; bowels freely open yesterday. Fifty leeches to be applied, and a line drawn above and below the erysipelas, with argent. nitrat. with a view of arresting its progress. R. Mass. ex. hyd. gr. iij. every night.

25*th.* The inflammation has not extended beyond the line of caustic; a vessel, deep in the wound, commenced bleeding to-day, and he lost half a pint of blood before it was discovered; it was arrested by pressure applied on both sides of the arm, which of course required a suspension of the local applications.

27*th.* Compresses removed, to allow the escape of matter from the outer side of the arm. No hæmorrhage; the erysipelas has extended beyond the mark of the caustic, both above and below; pulse is 80, rather weak; tongue disposed to clean; skin cool; bowels open

yesterday. No appetite. R. Pil. quin. sulph. gr. j. four times a-day; improved diet. Continue mucilage.

31*st.* There has been some extension of the erysipelas since last report, but the patient is better in every other respect. Continue treatment.

June 4*th.*—Walking about the wards; improved appetite and strength; the redness, &c. of the skin, has entirely disappeared. Seton moved daily—free discharge of pus.

28*th.* There is evidently some stiffening at the seat of fracture, as the head of the bone can now be moved by taking hold of the lower fragment. The arm to be surrounded by four firm splints.

August 3*d.*—Seton removed. There is a large deposite of bony matter on the internal side of the humerus, at the point through which the seton was passed.

September 15*th.*—The splints were removed entirely on the 5th instant; the bone appears perfectly firm, and he is daily regaining the use of the muscles, which had become very imperfect from long inaction. The deltoid had wasted very much before he entered the hospital, and the motions depending upon it are consequently still very defective.

October 29*th.*—Discharged—his arm is strong, and all the muscles act properly, excepting the deltoid, in which there is only a moderate degree of improvement.

Case. IV. *Ununited Fracture of the bones of the Leg, removal of a portion of the shaft of the Fibula, and excision of the points of the other fragments—Cure.*—Felix L. æt. 30, labourer, was admitted into the hospital on the 1st of August, 1834, with ununited fracture of the bones of the leg. He has been in this country six years, and has always enjoyed good health, except for a few months after his arrival in America. His habits are reported as temperate. On the 24th of July, 1833, he was injured by the upsetting of a cart, which was thrown upon his left leg, producing a compound fracture of both bones, the external wound being so large as to allow one of the fragments of the tibia to project nearly an inch.

The limb was kept in splints for five months. Extensive ulceration took place,—portions of the tibia exfoliated, but no union occurred, for reasons that will be noticed presently. His limb was shortened, and at times painful; the ulceration had healed—he was able to walk only with crutches, and under these circumstances came to the city for relief, and placed himself under the care of Dr. J. R. Barton.

From this history, and the appearance of the parts upon his admission, it appeared that the fracture of the tibia had occurred, two

inches and a half above its lower point—that the fracture had been oblique, and that a considerable portion of bone had exfoliated—that the fracture in the fibula was also very oblique, and just above that part which enters into the composition of the joint; after the accident the upper fragment of the fibula had slipped down upon the outer side of the lower, so as to resemble on a superficial inspection, the external malleolus; and in this situation a firm ligamentous union had taken place before the process of exfoliation was completed in the tibia, the fragments of which were thus kept so widely separated, that nature was unable to repair the injury by a deposite of osseous matter.

The application of caustic potash upon the nearest points of the tibia was tried, but without effect, owing to the extent of the intervening space, and no alternative presented but to excise a sufficient portion of the fibula to allow the approximation of the separated fragments. The operation was performed on the 25th of November, and the exposure of the parts confirmed exactly the views which had been previously taken. The tibia was first exposed, and the projecting points of each fragment taken off, so that the opposite surfaces might come fairly into contact. This part of the operation, showed the precise extent of fibula that must be removed to permit this approximation. The ligament connecting the two portions of fibula was next separated, and after removing the point of the lower fragment, the upper was turned out, and one and a half inches taken from its inferior extremity. The different portions of both bones then came accurately into contact with each other. No vessel required a ligature; the parts were neatly adjusted with adhesive plaster and a roller, the limb placed on a pillow in a common fracture-box, and the patient put to bed. The small finger saw* of Dr. B. was used very advantageously in the operation. A poultice was applied to the parts the following morning; the patient had slight fever with loss of appetite, &c. for three or four days, with some swelling and but little pain in the limb.

December 3d.—The swelling has subsided, but he has more pain in the limb; free suppuration; better appetite; limb kept perfectly quiet, and poultices continued; patient has a good diet.

18*th.* The wounds caused by the operation have nearly healed; a small collection of matter on the outer side of the leg has been opened, the bones are kept in apposition; the patient enjoys good health and suffers but little pain.

January 8th, 1835.—There appears to be some stiffening in the

* See N. A. Med. and Surg. Journ. Vol. III. p. 292.

fibula; a few spicula of bone have been discharged from between the ends of the tibia.

24*th.* Patient has had an attack of erysipelas of the leg; not extensive, nor attended with much constitutional disturbance.

February 6*th.*—The fibula has united; no union in the tibia; the ulcerated surfaces are just healing; pasteboard splints applied to the limb.

March 29*th.*—In the latter part of February, a shoe, with a heel sufficiently high to make the length of the two limbs correspond, was procured for him; the limb was then enclosed in moistened firm pasteboard, which hardening, formed a complete case for the parts, and he was directed to walk and bear as much weight as possible upon the diseased limb, with a view of hastening the deposite of callus. He is now able to walk about the wards with the assistance of a cane.

He left the hospital on the 11th of April, for the purpose of having the advantage of country air. Up to this time, he gradually gained strength in the limb, and facility in walking; but the union in the tibia was not yet firm. The pasteboard splint had been removed previous to his discharge from the hospital.

August 17*th.*—This patient remained in the country several weeks, and has since returned to the city. He is attending to his business, and walks without assistance; the parts have been gradually improving since the date of last report; he suffers no pain in the leg, except after unusual exercise; his health is good; he has had no erysipelas or ulceration since he left the hospital.

The stiffness of the ankle-joint and the depression of the great toe, consequences of the original injury and of the treatment necessary for it, are now the most annoying circumstances attending his case. The shortening of the limb, which could not possibly be avoided, is remedied by a very high cork sole to his boot.

Case V. *Ununited Fracture of the Femur, three inches below the Trochanter Major—Excision of the ends of the bone—Death from Metastatic Abscesses of the Lungs, &c. on the Sixteenth day after the Operation.*—Benjamin W. æt. 24, a native of Berks County, Pennsylvania, and speaking only the German language, was admitted into the Pennsylvania Hospital on the 14th of February, 1835, with an ununited fracture of the right os femoris. He is muscular, but not tall, of dark complexion, and had enjoyed good health for two or three years previous to his receiving the fracture. Before that period, he had been much afflicted with intermittent fever, but he had never been subject to cough or pectoral diseases of any kind, nor had

he ever before had a broken bone. His business was weaving, but for two months before the accident he was employed in digging iron ore in Lehigh county. On the 23d of August, 1832, while thus engaged, he was crushed by the falling of a bank of earth, which, in addition to severe contusions, produced an oblique and comminuted fracture of the femur, with great shortening and deformity of the limb.

For this he underwent a variety of tedious and painful treatment. Long splints were first applied, and removed at the end of six weeks, as union was supposed to be perfect. He commenced walking with crutches, the toes only of the injured limb reaching the ground, and he soon became sensible that the fracture had not united. Violent extension was afterwards made on two or three different occasions, and the limb confined in splints, or some other apparatus for a great many weeks, but all ineffectually; from this protracted confinement his health suffered materially, but after he commenced walking with crutches, and was mostly in the open air, he gradually regained his strength and health.

The operation was performed by Dr. Hewson, the surgeon in attendance, assisted by his colleagues, and in the presence of the medical class, on the 4th of March. From the high situation of the fracture, and its great depth, the external incisions were necessarily several inches in extent. The comminuted state of the bone, and the large quantity of callus that had been thrown out by nature in her efforts to remedy the effects of the accident, rendered the operation tedious, peculiarly difficult, and somewhat hazardous from its extent, and the proximity of some of the fragments to the large vessels of the thigh. By great care, however, and the judicious employment of the chain saw and other instruments, that had been prepared expressly for the occasion, all the projecting points, which prevented the approximation of the parts, were removed, and the two fragments brought fairly and firmly into apposition.

The integuments were approximated by means of the interrupted suture, adhesive plaster and bandages, except at the lower part, where the lint protruded which had been introduced into the bottom of the wound, to secure a free passage for the discharges in the most depending position. The limb was laid on pillows, supported by a double inclined plane, and the patient put to bed.

The patient underwent this protracted and painful operation with great fortitude, and was cheerful when placed in bed; the quantity of blood lost was not large; he perspired moderately, and although

he slept but little, expressed himself as having passed a comfortable night.

The bone being thus brought into the desired position, it became an object of great importance to have an apparatus contrived, by which, at any time, the parts could be inspected, and the dressings applied without disturbing the fragments. This was in a few days effected, by means of firm, but small splints on the inner and outer side of the thigh, connected to others of the proper angle, passing down the leg and attached to a foot-board, with a firm band around the pelvis, and a broad moveable support, (all properly padded,) upon the under side, and corresponding to the seat of the wound.

On the morning following the operation, his pulse was a little quickened; skin warm; tongue moist, slightly furred; patient in good spirits. He was directed to take mist. neut. ℥ss. with antim. tart. gr. one twelfth, every two hours. Upon removing the dressings, the parts presented a favourable appearance; a large portion of the integuments had united by adhesive inflammation, and at the lower part, where the lint had been placed, healthy pus was secreted. No inflammation of the surrounding parts; his pulse was slow and soft, 70; skin perfectly natural; had a good appetite; was gratified with the result of the operation, and appeared to be doing well in every respect till the evening of the 15th, when, after passing a rather restless day, he had rigors, followed by a little fever and sweat. The next evening he had another chill, and then perspired profusely; the skin and conjunctiva presented a yellowish appearance; pulse rather feeble, and near 150; tongue a little coated; the pus discharged from the wound less healthy. The patient's diet had been improved after the subsidence of the fever.

18*th*. The patient has had several rigors at irregular intervals since last report, followed by some heat of surface and copious sweats. The jaundice has increased very much, his tongue is clammy, darkish in the centre, and inclined to dryness; no appetite for the last three days; respiration short and frequent; slight cough; hawking and spitting frequently; no pain in the chest, but dryness of the throat; pressure upon the limb gives some pain, but none exists at other times; some tenderness upon pressing the abdomen firmly, but not particularly on either side; he is unable to sleep at night, and if he does, has unpleasant dreams; great dejection of spirits since the occurrence of the unfavourable symptoms. His bowels are kept open by means of enemata; discharges of a brownish colour. The granulations of the wound are pale and flabby, the discharge is copious, has a yellow

hue similar to that of the skin, and oily globules in considerable number are noticed in it. His pulse is 112, soft, weak; skin generally moist, and feels unpleasant; he has no inclination to eat. He is continued upon a liberal diet, with wine or porter. Quin. sulph. gr. j. ter die. Acid. sulph. dilut. gtt. xx. ter die.

20th. Restless; slightly delirious at times; sleeps but little; respiration high and hurried, 50; slight increase of cough; last evening and to-day he has the rusty-coloured, tenacious sputa of pneumonia; dullness on percussion; skin universally of a deep saffron hue; tongue more moist, with a brownish coat; teeth covered with dark mucus; pulse 120, feeble, some of the beats scarce perceptible; urine high-coloured, it and the perspiration staining his linen yellow; some pain in the abdomen, and at times retching; some tympanitis; countenance contracted, with an exceedingly anxious expression. The granulations are flabby, and of a darkish yellow colour; the discharge thin, and deeply impregnated with the same hue; for the last two or three days he has been able to take wine or porter only. ℞. Pulv. rhei. gr. xv. Aquæ camphor. ℥ss. M.—To be followed by an enema, with ol. terebinth. Milk punch, &c.

The patient's pulse gradually sank; his respiration became more oppressed; increase of tympanitis; delirium; features contracted; skin cool and clammy; indistinctness of pulse. Death at 6½, P. M.

Autopsy, twenty-one hours after death.—Exterior. Rigidity; skin of a deep saffron colour; moderate emaciation; the parts of the wound united by adhesive inflammation had separated, and the ulcerated surface presented a dark, flabby appearance; the two portions of the femur were in apposition; the cup-like cavity that was forming as a substitute for the joint, was about two and a half inches in diameter, and half an inch deep, irregular at its margins, covered with cartilage, and was three inches below the upper part of the trochanter major. Along the lower fragment an abscess extended to within two and a half inches of the knee; in nearly the whole of this extent the bone was denuded of periosteum, rough, and partially surrounded by pus. Three small pieces of detached bone were discovered. No pus was found in the veins, which contained dirty brownish liquid and coagulated blood.

Head.—Longitudinal sinus empty; glands of pacchioni visible; dura mater presenting the same yellow appearance as noticed in many of the other organs. Arachnoid moist, smooth; pia mater pale; cerebrum pale, moist and of beautiful consistence, not dotted: cerebellum and central parts pale, firm. One ounce of serum in the ventricles.

Thorax.—Left side, no adhesions; the cavity contained half a

pint of sero-purulent fluid of a yellowish colour; on the costal and pulmonary surface of the pleura, was a deposite of yellow lymph; in the inferior part of the consistence of false membrane. On the right side were adhesions at the superior and anterior part, in a small portion of its extent; the same false membrane on the surface, and six ounces of a puruloid fluid in the cavity. On the *surface* of the lower lobe of both lungs, were numerous rounded elevations, the largest, half the size of a walnut, and some of them presenting a yellowish tinge. The lung being cut into, showed these elevations to be the surface of numerous rounded masses—the largest being the size of a walnut, but generally that of peas or hazel-nuts; harder than the surrounding tissue, which was infiltrated with black blood and denser than usual. These masses presented various appearances; some of them were of a brownish aspect, resembling the liver, others darker in their colour, and of a gangrenous odour; some had yellowish points scattered through their substance, and others were almost entirely converted into a purulent liquid; false membrane not visible in the first, slightly so in the next, and very distinct in those containing pus. In the posterior part of the upper lobe there existed some of these collections, but none anteriorly.

Bronchi reddish, but not thickened. *Heart* medium size, coagula in both ventricles; valves healthy; half an ounce of serum in the pericardium.

Liver medium size, of a dirty, brownish lead colour; no trace of purulent deposite. *Gall-bladder* contained about one drachm of dark bile, of the consistence of tar; the ductus communis very much contracted, so that a common probe could not be passed through without difficulty; previous to which, no bile could be pressed through it into the intestine. The yellow tinge of the skin and secretions was noticed in nearly every part except the brain.

Stomach contained nearly a pint of fluid; on the posterior part the mucous membrane was of a dirty white colour, and softened, with a distinct line of demarcation; in the other parts mammillated, of good consistence; strips from eight to ten lines.

Small intestine contained mucus only, the membrane, whitish and of good consistence. Glands of Peyer developed. Isolated follicles visible.

Large intestine.—Membrane pale and of good consistence. *Spleen* double the usual size, and a little softened. *Kidneys* of a yellowish tinge throughout, smooth externally, *Bladder* contained two ounces of urine, which had tinged its membrane yellow.

Observations.—The five cases of ununited fracture included in this

report, are interesting, as illustrative of the resources of our art, in a class of cases so distressing to the subjects of them, as to have formerly claimed not only a recommendation of the terrible alternative of amputation, but the frequent performance of the operation. They are interesting also as offering a variety in the bones affected, and in the measures resorted to for their cures. They were the effect, too, of several of the various causes which may prevent the union of bones at the usual period; these causes may be briefly referred either to some constitutional defect, to the presence of debilitating diseases, or actual prostration; or, to what probably is more frequently the case, to circumstances preventing the application of a proper apparatus to restrain motion and to keep the parts accurately in apposition. The too early use of a limb thus injured, no doubt, frequently breaks up the newly-formed callus, and by constant friction rounds off the ends of the fragments so as to produce what is called an artificial joint, although generally possessing but few of the characters of a perfect articulation Certain it is that cases of this class are not at all unusual.

The first of the cases, was a healthy labourer, having an ununited fracture of the femur just above its middle, of nearly eight months standing, and we have every reason to believe, the result of the treatment that had been employed; his perfect recovery in his three or four previous fractures, and the cures that took place in the tibia, the patella, and the left femur, after the occurrence of this complicated accident, would certainly seem to indicate, that nothing was wanting in his constitution to effect the union of fractured bones. Even if it were possible that any circumstances could justify the application of such an apparatus to a fracture of any bone of the lower extremities, we could not expect that the parts would be kept in apposition, or a great degree of motion prevented; the deformity of the left femur, shows this to have been the case, and the want of proper splints no doubt produced the result, for which he cheerfully submitted to the formidable operation of excision of the ends of the bones.

This operation, originally proposed by Mr. White, is, in the thigh, particularly, of so painful a character, and involving so much risk to the patient, that it should only be resorted to when all other modes of treatment are believed to be inapplicable. It was only after full consideration and an entire conviction, that it alone would be successful, that it was undertaken in the present instance. The position of the fragments, the deposite of callus, and the limb affected, were barriers to a trial of the seton, friction or pressure. During the treatment, his repeated attacks of erysipelas were exceedingly distressing, and ap-

peared to protract the cure, which although complete, was only effected at the end of thirteen months.

Erysipelas has been an attendant on every case of operation for ununited fracture that we have seen, with one exception, and that one survived only a short period. The same fact is noticed in many of the reports of similar cases.

This patient also presented an exemplification of the danger there is of destroying the joints of a fractured limb, that requires a very protracted confinement; the knee, ankle, and several of the toes were almost anchylosed when he entered the hospital.

The second case originated from a very severe and complicated injury; and although the other fractures in the same arm united, yet the deformity was so great, and the line of direction of the fragments concerned in the middle injury so thoroughly changed, that they were not likely to be in apposition; add to this, the profuse suppuration, and the exfoliation of bone, and we have enough to account for the non-union in this case. Here too, no alternative presented, than to excise the ends of the bones, for the arm occupying the position it then did, would have been nearly useless; the ends of the bones were not near enough for the seton or friction to act efficaciously.

Entire success would no doubt have attended the first operation, had the patient continued in the hospital; the ulna had united nearly two months before he was discharged, and the fragments of the radius were so well in apposition, that the use of caustic, or the application of pressure, as recommended by Mr. Amesbury, would probably have effected a cure.

Nearly six months after he left the house, he received the fall which broke up the newly-formed connexion in the ulna, (the radius had not yet united,) the parts rubbing upon each other, their extremities were rounded off, and upon his reädmission, upwards of three months after this second fracture, there was not the least disposition to union. The fragments could now, however, be kept in the same line, and it was determined to resort to the operation, for which the world is indebted to the genius of the chief of American Surgery.

A seton was passed between each fracture, and in six weeks a stiffening was observed in the radius, and two or three weeks later in the ulna.

This patient was of an indolent indisposition; took little exercise, and spent most of his time in the wards; from this want of the active life, and the pure air to which he had been accustomed in the country, his health failed him rapidly, and at one time fears were entertained for his recovery. During this period of enfeebled health, there

was rather a diminution than increase in the firmness of the callus. When his health improved, the process was immediately renewed. But for this indisposition, there was every reason to believe the cure would have been a speedy one. The hospital air disagreed with the patient so obviously, that immediately after his discharge, he went to the country; and we have since heard indirectly, that he has recovered his health; that his arm is strong, and he following his occupation. He was less troubled with erysipelas than the preceding case, although he had several slight attacks. The application of leeches in one instance, arrested the inflammation promptly; in many cases they are strikingly beneficial, but often fail to produce any good effect.

The third case occurred in a stout healthy man, and was of more than a year's standing when he entered the hospital. The person who had previously attempted a cure must have been lamentably ignorant of the principle of the operation he was proposing, and but little schooled in the virtue of perseverance. The ligamentous connexion prevented a trial of friction, the oldest of the means of cure, and a successful case of which may be found in a previous report.* The operation of Dr. PHYSICK was here strongly indicated, and Dr. Harris had provided for the difficulty of perforating the strong connecting ligament, by procuring the perforator that was used before passing the seton.

In less than six weeks, there was an increase in the strength of the arm; in five more the seton was removed, and in another month the bone was perfectly firm. This patient's attack of erysipelas was a severe one; neither leeches to the part, nor the application of caustic to the sound skin, had any effect in arresting its progress. The solidification of the bone appeared to be hastened by this attack; if so, it may have acted upon the same principle as blisters, which were formerly recommended for the purpose. We recollect a case of fractured femur in the hospital, in which the actual cautery was applied over the seat of fracture, to hasten the deposite of callus, and in which, although great inflammation was produced by the remedy, the bone soon after became firm.

In the fourth case, during the process of exfoliation in the tibia, the upper fragment of the fibula, which had slipped down upon the lower, became united to it by *ligament*, and thus separated the fragments of the former so much, that nothing short of the removal of a considerable portion of the shaft of the fibula, could put the parts in a position to favour their union. This being done, the fibula had be-

* See No. XXX. of this Journal, p. 345.

come firm on the 6th of February, a little more than two months after the operation. The tibia was much slower in its progress to a cure, the ends of it, however, being fairly in apposition, a plan of friction nearly similar to that proposed by Mr. White, was adopted advantageously; the pasteboard moulded to the limb, gave it firmness, and after walking upon it in this way for a little more than a month, he was able to dispense with all artificial support. No inflammation extended to the joint, notwithstanding its proximity to the parts exposed in the operation. This patient too, when admitted, had a stiff ankle and anchylosis of one of the joints of the great toe, with such depression as to be a great annoyance to him.

The last case was one presenting unusual difficulties, from the position of the fracture, high up in a muscular thigh, from the comminuted state of the bone, and the irregular deposite of callus about the part. The extent of the operation, its painful nature, and all the risks attendant upon it, were foreseen, and fully explained to the patient; but the limb was such an inconvenience to him, that he was determined at all hazards, to undergo the sufferings and protracted confinement that must necessarily result from it, under the most favourable circumstances. Until the eleventh day after the operation, every thing went on favourably; during that day he was more restless than usual, and in the evening had rigors, followed by others at irregular intervals; he had marked despondency; anxiety of countenance; quickness of the pulse; slight yellow tinge of the skin, (in a few days converted into a deep saffron colour;) loss of appetite; disturbed respiration; many of the symptoms usually attendant upon the formation of metastatic abscesses.

The case became daily more aggravated; the appearance of the wound and of the discharges more and more unfavourable; remedies had no effect upon the progress of the disease, and he died on the sixteenth day after the operation.

Upon an examination post mortem, both pleural cavities were found to contain a large quantity of sero-purulent fluid, with a deposite of lymph upon their surfaces. In the *lower lobes* of both lungs existed numerous diseased masses, metastatic abscesses in the various stages of their formation; in the posterior part of the upper lobes were a few of these collections, but none whatever anteriorly. No purulent deposite was noticed in the liver. The marked contraction of the ductus communis, amounting almost to obliteration, is interesting as connected with the jaundiced hue that was so strikingly developed.

The development of these abscesses after profuse suppurations and

operations is so frequent, their approach so insidious and unexpected, and their nature when developed in the viscera so totally unmanageable, as to render them objects of deep interest to the surgeon and pathologist.

There is often observed in the Pennsylvania Hospital, as in most large institutions of the kind, an epidemic erysipelas, arising without obvious cause, continuing a longer or shorter period, and then declining as inexplicably as it had commenced. During the spring of 1834, it was so common, that scarce a patient operated on during a period of nearly four months, failed to have his case complicated with one or more attacks, and the cures were much protracted in many instances, although no case proved fatal. But about the time when this operation was performed, instead of erysipelas, there was a marked disposition in the sores and injuries in the house, and the cases received soon after, to take on a sloughing process.

A seaman in the north house with an ulcer of the leg, became exceedingly ill, and the sloughing extended so much, that it was feared amputation would be required.

A man with fracture had slight ulceration of the heel from extension, but not sufficient to be of much moment; sloughing took place to such an extent, as to involve the tendo-achilles, and has since been very tedious in its cure.

In another patient with fractured thigh and ribs, the same diseased action took place in no less than five points, although the utmost care was taken to remove all sources of irritation as soon as discovered.

A boy operated on for necrosis, had sloughing of the integuments about the part.

A girl in the Female Surgical Ward was admitted with inflammation of the cellular tissue under the knee; soon after her entrance sloughing commenced, and recurred twice or three times afterwards to such an extent, that the large vessels were much endangered.

A finger was amputated by one of the surgeons; instead of uniting by adhesive inflammation, as might have been expected, sloughing of the stump occurred so extensively, as to expose a considerable portion of the end of the bone.

Four or five cases of paronychia, with sloughing, came under our notice about the same time; nor did this influence appear confined to the hospital, for many practitioners in the city remarked that they had, at the same period, an unusual number of the latter class of cases under their care.

These facts are mentioned to show the extensive prevalence of

this influence about the time, the case of which we have been speaking, came under treatment.

No cause for this influence could be detected. There is probably no hospital better ventilated, and since the substitution of air furnaces in the cellars for the stoves formerly kept in the wards, the purity of the air and the absence of unpleasant effluvia have been matter of common remark.

Whether any, or what influence was excited by this epidemic predisposition, in producing the melancholy result so different from what had been hoped for, we do not pretend to say, but its occurrence at this time was so striking, as to deserve mention in the record of the case.

September, 1835.

ART. III. *Observations upon the Mortality in Philadelphia under the age of Puberty, showing the Excessive proportion of the Male over the Female Deaths, and the particular Sources from whence it Proceeds.* By G. EMERSON, M. D.

OF the children born in Philadelphia during the ten years included between 1821 and 1830, amounting, according to the returns made to the Board of Health, to 64,642; there were 2,496 more males than females. But notwithstanding the males at birth thus exceed the females about $7\frac{1}{2}$ per cent., a reference to the census of 1830, shows that by the fifth year of childhood, the male excess is reduced to about 5 per cent., and at ten years to only 1 per cent.; and that the reduction still going on, the females between the ages of ten and fifteen, exceed the males about 8 per cent., and between fifteen and twenty, 7.3 per cent.

Here then we find, that during the early stages of life, there are agencies operating to reduce unduly the proportion of the male sex, and to trace out and identify these, forms a highly interesting subject of inquiry. This we were unable to do, when our former calculations upon the subject of infantile mortality were made,* as no distinction of sex existed in the record of deaths occurring under the twentieth year. For the last three years, however, this important designation has been made in the bills of mortality, and we are thus enabled to identify with precision the affections which prove most fatal to the respective sexes during the periods of infancy.

It has commonly been supposed that the greater exposure of males

* For which see American Journal of the Medical Sciences, Vol. I. p. 116, and Vol. IX. p. 17.

to accidents, furnished a sufficient explanation of their greater mortality. But our inquiry shows the fallacy of this reasoning, the deaths reported under the head of casualties constituting but a small proportion of the whole mortality, in which when burns and scalds are included, the female deaths are found to exceed the male. The truth is, that with very few exceptions, all the morbid influences to which the early periods of life are exposed, operate with peculiar fatality among the males, showing unequivocally that the true cause of the disparity resides in some physiological peculiarity.

The following tabular statements exhibit:—

1st. The mortality under the twentieth year, from the most frequent sources, during the years 1832, 1833, and 1834, with the numbers of each sex from each disease, and the ratio in which the deaths of the one exceed those of the other sex.

2d. The numbers of each sex for the respective years.

3d. The periods of infantile life at which the deaths occurred.

DISEASES.	Males.	Females.	Excess. M.	Excess. F.	Ratio of Excess.
Consumption	153	185		32	17.3 p. ct.
Convulsions	433	357	76		17.5
Bowel complaints of all kinds, (excepting Cholera Maligna)	699	597	101		14.5
Small-pox	133	114	19		14.3
Scarlet Fever	216	220		4	1.8
Croup	157	120	37		23.5
Hooping Cough	78	80		2	2.5
Bronchitis	114	84	30		26.3
Inflammation of the Brain	101	67	34		33.6
of the Lungs	190	151	39		20.5
of the Bowels	134	98	36		26.8
Fevers of all kinds, (Scarlet excepted)	185	141	44		23.7
Dropsy, (general)	42	35	7		16.6
of the Head	288	258	30		10.4
of the Chest	18	26		8	30.07
Casualties	15	8	7		46.6
Debility and Decay	251	197	54		21.5
Atrophy	65	38	27		41.5
Teething	17	16	1		5.8
Burns and Scalds	26	35		9	25.7
	3315	2827	542	55	
	2827		55		
Total mortality of both sexes from the above diseases	6142		487		

The male mortality exceeds the female in the ratio of 7.94 per cent.

Whole mortality from all diseases for the three years mentioned, under the twentieth year, (still-born deducted,) is males, 4,143—females, 3,541;—male excess, 602=7.69 per cent.

From this it will be seen in what way the excess of males at birth is reduced during the first periods of life, and how it happens that the females at the age of puberty come to outnumber the males in about the same proportion that these exceeded the females at birth.

The diseases which appear particularly obnoxious to the male sex are the following, arranged nearly in the order of their decreasing mortality:—

Inflammation of the brain, inflammation of the bowels, bronchitis, croup, inflammation of the lungs, fevers of all kinds, (except scarlet,) convulsions, general dropsy, dropsy of the head, small pox.

To these sources of mortality may be added those under the head of casualties, with others vaguely designated debility, decay, &c.

The few cases in which the deaths of females predominate, are under the following heads:—

Consumption, dropsy of the chest, scarlet fever, burns and scalds, hooping cough.

To show that the disparity exhibited in the deaths of the sexes is not of accidental occurrence, but one depending almost invariably upon causes operating from year to year, the following statement is subjoined.

Infantile Mortality in Philadelphia in the Years 1832, 1833, *and* 1834, *from the most predominant Causes, with the Numbers of each Sex for the different Years.*

DISEASES.	1832.		1833.		1834.	
	Males.	Females.	Males.	Females.	Males.	Females.
Consumption	58	74	54	50	41	61
Convulsions	160	147	130	96	143	114
Bowel complaints, (Cholera Maligna excepted)	299	235	126	132	267	225
Diarrhœa alone	60	53	21	25	33	40
Small-pox	8	5	56	52	69	57
Scarlet Fever	150	147	30	31	36	42
Croup	60	47	50	41	47	32
Hooping Cough	26	32	26	26	26	22
Bronchitis	40	30	15	11	59	43
Inflammations of all kinds	197	139	128	100	160	132
of the Brain	34	24	22	14	45	29
of the Lungs	83	60	55	35	52	56
of the Bowels	54	32	39	40	41	26
Fevers of all kinds, (Scarlet excepted)	86	72	59	42	40	27
Dropsy, (general)	60	53	7	4	16	12
of the Head	102	78	87	83	99	97
of the Chest	10	12	4	6	4	8
Casualties	5	6	3	2	7	
Debility and Decay	95	70	76	69	80	58
Atrophy			11	6	54	32
Teething	11	3	3	6	3	7
Burns and Scalds	6	10	11	12	9	13

Infantile Deaths in Philadelphia during the Years 1832, 1833, *and* 1834, *from the most Common Sources of Mortality, distributed under the various Periods of Life, from the First to the Twentieth Year.*

DISEASES.	Under 1 year.	From 1 to 2 years.	From 3 to 5	From 5 to 10	From 10 to 15	From 15 to 20
Consumption	74	48	54	32	26	104
Convulsions	550	107	94	24	10	5
Cholera Morbus	1	2	6	9	2	3
Maligna	4	6	37	42	22	25
Infantum	608	266	57	7	2	0
Diarrhœa	115	61	32	16	4	4
Dysentery	25	24	17	15	6	2
Small-pox	82	34	76	30	12	13
Scarlet Fever	33	83	205	100	12	3
Croup	108	63	85	19	2	0
Hooping Cough	81	31	37	8	1	1
Bronchitis	104	39	36	16	0	3
Inflammation of the Brain	51	36	36	20	13	12
of the Lungs	147	82	64	18	7	11
of the Bowels and Stomach	103	37	39	21	12	20
Fevers of all kinds, (Puerperal and Scarlet excepted)	87	44	70	45	39	45
Dropsy, (general)	10	7	21	20	7	12
of the Head	198	166	116	54	9	3
of the Chest	8	4	15	5	6	6
Casualties	1	3	6	4	5	4
Debility and Decay	329	22	19	6	1	4
Atrophy and Marasmus	132	71	32	6	2	3
Teething	20	11	2	0	0	0
Burns and Scalds	6	14	22	12	7	4
	2877	1261	1178	529	200	287
Of other affections	665	199	217	106	57	92
Total from all sources	3542	1460	1395	635	257	379

ART. IV. *Cases, with Remarks.* By C. A. LEE, M. D. of New York.

CASE I. *Phthisis Pulmonalis—Aphonia—Extreme Emaciation—Total loss of Right Lung—Abrasion of the Mucous Membrane, lining the Larynx and Trachea.*—G. N. aged sixteen, of fair complexion, and scrofulous habit, about two years since, had a severe fall, which stunned him, and he lay for some time insensible. In a few days he was seized with a cough, which continued during life. From the time of attack, he permanently lost his voice.

The emaciation and failure of strength were so gradual, as scarcely to be perceptible. He never suffered or complained of any pain in the chest. For the last year the expectoration was purulent, and for some months before he died, was very copious; appetite continued tolerably good throughout the disease; bowels regular; hectic fever pretty constant; kept the bed for the last four or five months of his life.

Autopsy.—Exterior. Body emaciated to the last degree. Right side of the chest more prominent than the left; hollow sound on percussion; on opening the chest the right cavity was found perfectly empty, with the exception of nearly half a pint of purulent matter. The pleura was thickened, and adhered firmly to the ribs. A large portion of the left lung was also removed by ulceration, and the remaining part full of tubercles, in different stages of maturation. No healthy structure could be found in the pulmonary organs. The trachea throughout a large part of its extent, was denuded of its mucous membrane, and where it was not, the mucous surface was softened, and covered with a purulent secretion. The larynx particularly, was deprived of the mucous membrane, and the muscular fibres were soft and flabby. The pericardium contained a more than usual quantity of serum. Other organs healthy.

Remarks.—Cases of aphonia, or loss of voice, are by no means unfrequent. Most cases appear to arise from an inflammatory affection of the mucous membrane, involving the delicate muscular structure concerned in the production of sound. Anatomists describe the lining membrane of the larynx as covering the posterior face of the epiglottis, and when it reaches the thyro-arytenoid ligaments, it is tucked in between the upper and the lower one, so as to form on either side, an oblong pouch, (the ventricle of Morgagni,) projecting into the fatty glandular matter on the posterior face of the thyroid cartilage, and having its base resting on the thyro-arytenoid muscle, forming the vocal apparatus. This pouch in the present instance, was entirely obliterated, there remaining no vestige of mucous membrane, or even of muscular structure. This, I believe, will satisfactorily account for the loss of voice.

Case II. *Black Ramollissement of the Liver—Sudden Death.*—Peter ——, a coloured man, æt. 40, night scavenger, of intemperate habits, had been complaining of debility for some time, and disordered bowels While walking the street he suddenly fell, and in a few minutes expired.

Autopsy.—The *heart* was preternaturally enlarged, and the left ventricle hypertrophied. The *liver* was a completely disorganized

mass, resembling exactly coagulated blood, black, and possessing very little consistence. It appeared to be covered by the peritoneum, on rupturing which, a considerable portion in a semi-fluid form escaped. At first, I supposed there was a rupture of the vena porta, but as none could be found, and as there appeared to be a general mollescence of its whole substance, I abandoned this supposition. Other organs healthy.

Remarks.—The pathology of the liver is as yet but very imperfectly understood. I regret that I could not obtain a complete history of the symptoms in the above case, but it is certainly worthy of remark, that the subject was able to work, up to the very time of his death. What was the immediate cause of dissolution I know not. I have been able to find but very few such cases on record. ABERCROMBIE gives one case very similar, which he calls "black ramollissement of the liver." Neither BAILLEY nor MORGAGNI describe any disease corresponding to the above, although COOKE, in a note, (Vol. II. p. 171,) has the following remark:—"Dr. MARTINEZ has given an instance of this circumstance in a boy, fifteen years of age, who had been afflicted with abdominal pain, diarrhœa, and jaundice. The liver was one-third less than usual, *softened, and reduced to pulp. Its structure somewhat resembled that of the spleen*, but was of a rhubarb colour." I ought to have mentioned, that in the present instance, the volume of the liver was about one-half the usual size, and no trace of the gall-bladder or biliary ducts could be found. BECLARD alludes to a similar disease, which he calls "gangrene of the liver," I would refer to LOUIS' "*Recherches Anatomico-Pathologique*," (p. 407,) for some judicious observations on ramollissement of the liver. In a case which he describes, (p. 253,) he has the following remark:—"*A l'ouverture du cadavre, le foie fut trouvé double de son volume naturel; la couleur etait d'un noir foncé; la substance etait comme putrifiée, &c.*" Perhaps none of the French pathologists have investigated the pathology of the liver, with more success than M. GENDRIN, particularly its inflammatory affections. I shall, therefore, quote the following remarks, as connected with the question, whether the appearances I have described were the result of inflammation. "When the hepatic inflammation is violent, in cases where it is attended with great congestion of the vena porta, determined particularly by an intense pneumonia, or by a hypertrophy of the heart, the tumefaction of the liver is considerable; *the organ assumes a deep violet colour, resembling the lees of wine; its consistence is uniformly diminished; it is reduced by the slightest pressure to a violet reddish pulp, like the tissue of a softened spleen, &c.*"

Boisseau also, in his *Nosographie Organique*, supports the doctrine, that ramollissement of the liver is, in all cases, the result of acute or chronic inflammation; in the former case being reduced *to a soft, black pulp*, "in which the fingers will sink by their own weight," and in the latter to a deep bronze colour, of firmer consistence.

Andral, in his Clinique, describes many interesting cases of hepatic affection, but none exactly corresponding to the above. He has several cases of "*ramollissement rouge du foie*" and after detailing Observation X. (p. 321,) he observes, that in that case, "though the softening of the liver was most remarkable, *yet it was not attended during life by any symptoms which might lead to a supposition of its existence.*" It should, however, be remarked, that Andral intimates his belief, that though chronic inflammation of the liver may result in ramollissement, yet that in such cases it is of a pale red, brown, or yellowish colour, and its texture is generally indurated instead of softened, which is however at variance with some of the observations of Boisseau. In the case which I have detailed, it is impossible to believe that the appearances were the result of acute inflammation, as the patient had not been confined to his house, and no symptoms had indicated such a disease. If, therefore, it was not the effect of *chronic* inflammation, to what must we ascribe it? May it be caused by what Mr. Hunter calls interstitial absorption; thus removing the cellular structure only?

Case III. *Fractured Spine—Death Five Weeks after the Accident.*—Mr. H. æt. 48, of good constitution, and very temperate habits, fell from a building across a plank, and was removed home in a state of insensibility. I saw him an hour after the accident. Found him in great agony; restlessness and anxiety extreme; complained of great pain at the epigastrium; breathing very laborious and painful; pulse 80, tremulous, irregular, and week. V. S. ℥iv. Blood appeared thin and red like arterial. Warm fomentations to stomach, and sinapisms to extremities; morphine, grs. ij. and warm brandy toddy. In two hours he felt somewhat relieved, and during the ensuing night he fell asleep.

21*st.* On examining more closely, I found a projection at about the middle vertebra of the back, and the lower extremities were entirely deprived of sense and motion. Has had no evacuation by stool or urine; senses perfect; drew off a pint of urine by catheter. At 11 o'clock, A. M. had a severe turn of pain at the epigastrium, with great anxiety and heaving of chest; relieved a good deal by morphine. Saline enema produced free evacuations.

22*d.* Passed a tolerable night. Pulse 75, full, and regular; re-

action fully established. The paralyzed parts are bounded superiorly by a line, extending from the top of the ileum to an inch below the umbilicus, and so round the body; temperature of lower extremities natural; passed catheter; enema; warm fomentations, &c. &c.

It is unnecessary to detail the symptoms from day to day. Paroxysms of pain were frequent, generally relieved by morphine; pulse ranged from 70 to 100; appetite variable, generally poor.

On the 28th, diarrhœa set in, which weakened him very much. Ordered Port wine and arrow root; pill. camphoræ.

From the 28th of August to the 9th of September, his strength gradually failed, and hectic fever regularly came on at evening; pain increased towards morning; urine flowed involuntary, also his fæces; sloughing commenced over the sacrum; passed a probe eight inches in contact with the bone. Quinine and generous diet.

September 13*th.*—Very feeble; pulse 64; occasionally chills; sleep very disturbed; removed a large slough from over sacrum, smell very offensive; copious discharge of thin purulent matter; borders of ulcer a deep violet colour; body much emaciated; legs more in proportion than the arms; urine contains bloody pus.

16*th.* Had a chill of several hours duration; stomach began to be very irritable; much heart-burn and cardialgia; takes scarcely any nourishment; voice a whisper. Lime water and milk sets best on his stomach.

19*th.* Stomach retained nothing for the last forty-eight hours; regular chills every day, lasting from one to four hours; small blotches on different parts of the body. Chloride of lime has to be used freely to correct the offensive smell. Pulse 60, and weak.

From the 19th to 24th, the day of his death, his suffering was extreme; the seat of pain appeared to be the stomach and small intestines. He said his stomach *burned;* pyrosis constant; nothing was retained. For the last week he took little or no nourishment; secretion of urine scanty; extremities cold; mental faculties perfect to the last. Death occurred on the 24th of September, just five weeks from the day of the accident.

Autopsy, twenty-four hours after death.—Exterior. Extreme emaciation, particularly of lower extremities; countenance placid; ecchymoses on various parts of the body, particularly the back. The muscles of the spine and back were of a dark red, and in the region of the injury livid. The spinal marrow was exposed for about twelve inches, by separating the oblique processes. The oblique processes of two of the middle dorsal vertebræ were fractured, also the spinous processes, and

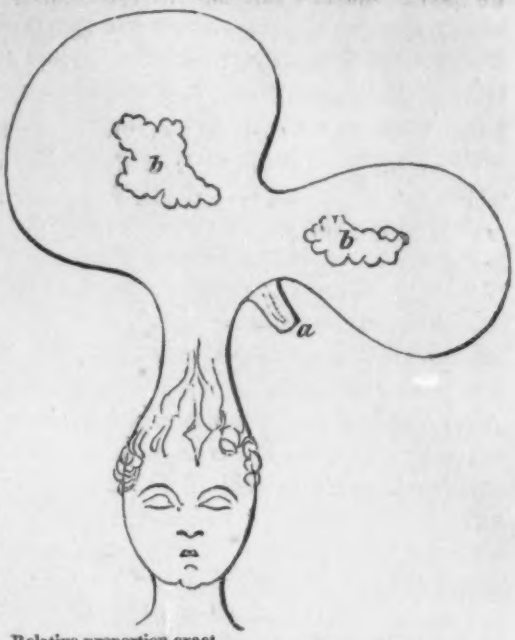
the intervertebral substance anteriorly was compressed into a very narrow space. The dura mater and sheath of the medulla spinalis was thickened and much altered in its texture for the space of four or five inches. The spinal marrow itself was reduced to a soft, homogeneous pulpy mass, resembling pus. Below the place of the fracture, the cavity was filled with bloody serum. The veins were distended with blood.

Abdomen.—*Spleen* much congested, and presenting a dark marbled appearance. *Liver* of natural size, and of a pale yellow colour. *Stomach.* The whole mucous membrane of the stomach was of a dark brown colour, and near the pyloric orifice nearly black. It was softened into a pulp, and could easily be scraped off by the fingers. The mucous coat of the small intestines exhibited also a like appearance, except perhaps being of a lighter shade of red. Its texture was so much altered that no follicles could be detected. The deep red colour was as uniform as if it had been painted. The large intestines natural. The bladder was contracted into a hard ball, as in cholera, and contained no urine. Its mucous membrane was considerably injected.

Case IV. *Pleurisy—Sudden Metastasis to the Leg—Death in forty-eight hours.*—T. T. aged forty, of intemperate habits, was seized on the 26th of March, with severe pain in the left knee, after a hard chill, attended with the other usual symptoms of a highly inflammatory attack. He was bled to ℥xvj. and a cathartic administered. On the 21st I was called in. I found him with great pain through the whole chest and back; difficult breathing; anxious expression of countenance; delirious at times; pulse 100, and tense. V. S. ℥xij. Cathartic rep. episp. to thorax. At evening he complained of a pain in the calf of the right leg.

22*d*, 7, *A. M.* Pain in the chest entirely gone, but that in the leg most excruciating; breathing perfectly free; calf of the leg very much swollen, and of a deep red. 3, P. M. The swelling extended from the toes to the middle of the thigh; leg nearly twice the natural size, purple, and ready to burst; bloody serum under the cuticle, which was elevated; delirious; great restlessness and anxiety; sensibility of the leg entirely gone; cold to the feet. Made several incisions, which discharged a little, thick, tarry-looking blood; pulse very small and frequent; episp. to leg; quinine, wine, ammoniæ. Died at 10 o'clock, P. M. Strength held out to nearly the last. Permission could not be obtained to examine the body.

CASE V. *Monstrosity—Fœtus Born at the Full Period—Lived but a few minutes.*—The face was not more than half the size of that of a full grown fœtus, but the body was of the natural bigness. One of the feet was clubbed. From the vertex of the head, a membranous neck, connected with two enormous pouches, extended about three inches in length, and was covered externally by the scalp. The right protuberance, which was the smallest, was about *twice* the size of the head, soft to the feel, and covered with a skin-like expansion, resembling the scalp, except the portion marked *b.* which was nearly of the texture of cartilage. The sac on the left side was about three times the size of the head, and was contained in a beautiful membrane, of a fresh colour, and in its texture resembling the dura mater, but less firm. On opening the right sac it was found filled with a dark semi-fluid mass, like coagulated blood. The base of the tumour resembled brain, only much softened. On the neck a connecting portion of the tumour was a singular formation of bone, covered with skin, and terminating in a mucous secreting surface, of about one inch in diameter. The shape of the bone was irregular, being about three inches in length and two in breadth. Distinct lobuli of brain were found in the largest tumour, traversed by large blood-vessels. One of these lobules contained a small round bone, perfectly insulated, and of a smooth surface. The larger tumour appeared to be invested by the *dura mater*, and in the centre to be of a homogeneous and apparently disorganized mass; portions were found closely resembling the *corpus callosum*, *corpora striata*, and other divisions of the cerebrum proper. The interior of the mass also, on each side, was penetrated by two large, irregular shaped cavities, lined with a soft pulpy membrane, and a mass of vessels, similar to the *choroid plexus*. These cavities com-



Relative proportion exact.
a. A bony protuberance, with a secreting surface.
b. b. A white membrane, of a dense, cartilaginous structure.

nunicated through the neck of the tumour, with the contents of the cranium. The cranium was about one-third the usual size, and the sutures firmly ossified, leaving however an opening at the vertex, communicating with the exterior tumours, of about two inches in diameter. The bones were of unusual thickness, and bore the appearance of powerful compression. Owing to the circumstances under which the dissection was made, no opportunity was allowed of examining the cranial contents or any of the other organs.

ART. V. *Notice of the successful employment of the Colchicum Autumnale in Tetanus, with general observations on the treatment of this Disease in Hayti.* By WILLIAM G. SMITH, M. D. of Port Au Prince.

IN Hayti, as in all warm climates, tetanus prevails to a considerable extent, but it would seem most confined to the natives, as I have never known a case to occur in an European, or any stranger whatever. It also appears, that persons in this country from the age of five years to thirty, or thirty-five, are most predisposed to attacks of this disease. In the course of little more than two years and a half, nine cases of tetanus have fallen under my observation, and the greater number of these were under my own care. Women do not seem to be so susceptible of tetanus in any of its varieties as men; of the nine cases, only one having occurred in a female. Of the nine cases, two were traumatic, and were induced by very slight wounds, the remaining seven were idiopathic, no direct cause being present.

Traumatic Trismus.	2 males, under the age of 20, 1 died, 1 cured.
Idiopathic Opisthotonos.	3 males, under the age of 30, 1 died, 2 cured. 1 female, under the age of 40, died. 2 males, under the age of 25, cured.
Idiopathic Pleurosthotonos.	1 male, aged 15, died.

Total, 9—cured, 5—deaths, 4.

The four last cases of tetanus which have come under my care, were treated with the Colchicum autumnale, and three out of the four recovered. The following is the general course I pursue, in the treatment of the disease:—On being called to a case of tetanus, my attention is first turned to the actual state of the bowels; constipa-

tion in this disease is at least a grave symptom, and should be relieved by injections. I prefer some emollient fluid for this purpose, because I believe that in almost all cases, there is conjoined with costiveness, some degree of intestinal irritation. I commence by administering an enema of ℔j. decoction of either flaxseed or the okra, (Ketmia gombo,) cum ol. ricini, ℥iij. or ℥iv. for an adult. After this, fifty or sixty leeches are applied to the spine, from the neck to the sacrum; in my particular practice, I have made choice of the scarificators and cupping-glasses, and the result has been most satisfactory. When the muscles of the jaws and neck are effected, as is most usually the case, leeches are also applied to the mastoid processes; the moment the cups or leeches, whichever may have been used, are removed, cloths wrung out of a strong solution of the muriate of ammonia, are constantly applied to the whole of the vertebral column, the back and the neck. Internally I administer the vinus tinct. of colchicum, commencing with ℥ss.; the dose is increased every half hour, and repeated until emesis or catharsis has been produced. As soon as one or other of these effects is obtained, this remedy is to be discontinued; if there afterwards occur any colic or griping, with exhaustion, as in all probability there will, I am in the habit of giving the spt. mindereri ℥ss. every hour, with the addition of one-fourth of a grain of acetate morphine, in solution. If the surface be cold, and there be symptoms of collapse, warm applications are made to the extremities, and the axilla; and the muriated solution is discontinued. The seeds of the colchicum appear more permanent in effect than the bulb; I accordingly make a tincture as follows:—℞. Sem. colch. sicc. ℥ij.; Vin. albi. hisp. ℔j. Infus. &c. as the books recommend.

All the cases of tetanus which have fallen under my care, have been, with two exceptions, treated as above stated, with a very happy result. The exceptions, were the two first cases I treated in this Island, and in which I employed opium, general venesection, terebinth. &c. &c.; the patients were put into a warm bath, but on being taken out of the bath, the spasms became more alarming, the limbs more rigid, and in one instance, death immediately followed. I shall never again treat tetanus, while in the West Indies, as recommended in the books. I was first induced to employ the colchicum for the cure of tetanus from the accounts given by Mr. Haden, of London, of its good effects in chronic rheumatism, and inflammatory diseases, as well as from previous experience, while resident Physician at the House of Refuge in New York. Dr. Ives, of that city, frequently employed the tincture in rheumatisms, the effect I invariably observed it to produce, led me to believe that the colchicum possessed qualities both

as diaphoretic, diuretic, and actively cathartic, besides being antispasmodic and anodyne. I am now certain that in tetanus, it acts in a manner altogether peculiar. In tetanus there is obstinate constipation, violent spasms, muscular rigidity, with pain, often retention or suppression of urine. Now the colchicum, when genuine, appears to combine in itself sufficient qualities to controul several of these symptoms at once. It, however, does not invariably promote vomiting; this may depend on its genuineness, but it almost invariably acts upon the kidneys, the skin, and the bowels. I conclude this paper with a case of tetanus, in which the tincture of colchicum was successfully employed; the other cases I would give, but my article is already longer than I at first intended it to have been.

Case. *September* 29, 1834, *7 o'clock in the evening.*—Monsieur Tourneur fils, aged twenty-seven, tall and slender, temperament irritable, had been perfectly well until two days after his arrival in Port Au Prince, from a journey of fifty leagues on horseback, over the mountains of Jacmel.

He had travelled night and day, and been obliged to cross several streams of water in his journey. He complained to me of a stiffness and pain felt in the back part of his neck; that he could not turn his head to either side without difficulty and pain; that in eating, his jaws felt fatigued. Pulse regular, from 70 to 75. I thought lightly of his complaining, but believing it might be a torticollis occasioned by exposure and suppressed transpiration, I recommended friction, with a stimulating liniment, and left him. But between five and six hours after, I was called again to my patient, who was represented to have grown worse every hour since I had left him. I went immediately to his room, and found him indeed worse. Stiffness of the muscles of the jaws and neck; pain in the sternum, shooting into the back; head inclined backwards; occasional spasms; pain along the vertebral column; belly somewhat retracted; pulse little affected; skin dry; deglutition slightly impaired. The true nature of his complaint being more fully developed, and even urgent, my patient was immediately put under the treatment, which, in two prior cases, had been successfully employed.

Treatment.—Enema decoct. lini. ℔j.; Ol. ricini, ℥iij.; Scarificators and cupping-glasses to the vertebral column, from the neck to the sacrum; leeches to the mastoid processes. On the cupping-glasses being removed, cloths wrung out of the solution of muriate of ammonia, were constantly applied to the spine, back and neck. Internally the vinus tinct. of colchicum, ℥ss. every half hour in unincreased doses.

30th, 4 o'clock in the morning.—No visible change; has not urinated during sixteen hours; watchfulness. 7 o'clock. Slight nausea; pulse full and compressible; difficult deglutition. Colchicum and muriated application continued. Half past 9 o'clock. Pulse full and soft; skin dry and warm; pain in the sternum still present; bowels not moved; body and inferior extremities rigid; spasmodic paroxysm of longer intervals; urine small in quantity, of a paler colour, and depositing a flocculent sediment. Colchicum continued in increased doses. 12, P. M. Emesis and catharsis almost synchronous; glow of moisture over the chest and on superior extremities; pulse regular, not full, as in the morning; deglutition unaltered; alvine discharges fœtid, of a dark bronze colour. Colchicum discontinued. 3 o'clock, P. M. Active catharsis; occasional vomiting of dark bilious matter; pulse regular, a little quickened; spasms at longer intervals; pain in sternum absent. Enema, decoct. of okra without the oil. 5 o'clock. Urine copious, colour and deposite unchanged; profuse perspiration; purging continued of deep bilious matter. Patient said his tongue felt lighter; slight pains in the bowels. Tepid tisane of decoct. Ketmia gombo, (okra.) 7 o'clock, (evening.) Pulse full, 65 or 70; profuse sweating; deglutition unembarrassed; nausea; no vomiting; alvine discharges fluid, of healthy bile, less fœtid; spasms very feeble, confined to lower extremities, and were excited only when the feet or legs were touched; a tingling sensation felt in the ears. Half past 9 o'clock, (night.) Skin warm; frequency of pulse a little increased; severe tormina immediately before going to stool; nausea; no vomiting; abdomen soft; pain and stiffness of the neck and jaws diminished; mouth dry, thirst. Spt. mindereri, ℥ss. Acet. morph. one-eighth of a grain in solution every hour; increasing the quantity of morphine, while the tormina and griping continued.

September 31st, 6 o'clock, A. M.—Patient said he felt better; had dozed a little during the past night; colic and griping ceased between 3 and 4 o'clock in the morning; no spasms; pulse regular, about 80; belly soft and natural to the touch; skin warm and moist; but two evacuations during the night. Patient complained of deafness, and of a tingling noise in his ears; a heavy languid sensation over the whole body, and as he said, as if he had been beaten with sticks. Spt. mindereri and ammoniacal applications discontinued. Tepid tisane of decoct. okra. Injections of the same, with ℥ij. ol. ricini. 9 o'clock. Patient dozed at intervals; one stool of liquid inoffensive bile; slight colic; skin moist; tongue white and expanded; no spasms; all rigidity of the limbs absent, except about the large joints, particularly the knees; heavy sensation about the neck,

masseter and temporal muscles; deglutition restored. Acet. morph. half a grain in solution. 12 o'clock, P. M. Skin moist; pulse full and regular; had two evacuations from the bowels of a yellow colour; secretions generally reëstablished; great lassitude; hearing restored; no tingling noise in the ears; colic absent. Patient slept one or two hours. 3 o'clock, P. M. Patient laying on his side; tranquil; no stools; pulse regular; tongue white; heavy sensation of the head and neck; skin warm and moist; no spasms; no rigidity of the limbs; general soreness of the body. Drinks freely of okra tisane. 8 o'clock, (evening.) One evacuation of dark colour; severe pains in the bowels, confined to the umbilical region; pulse quick; skin warm and dry; heaviness of the head; tongue unchanged. Leeches applied to the mastoid processes; surface spunged with the solution of the muriate of ammonia. Half past 10 o'clock. Head relieved; skin cool; pulse soft and full; copious urine, of lighter colour and little deposit; no stools; slight nausea and colic. Acet. morph. one-half grain in solution. Enema of decoct. okra.

October 1*st*, 9 *o'clock*, *P. M.*—Pulse regular; skin soft and moist; had a stool towards morning of bilious matter, without odour; slept some part of the night; soreness of all the limbs; tongue yellowish-white colour; all tetanic symptoms absent. Patient complained of malaise, (lassitude,) and of uneasiness, (not pain,) over the whole body. 3 o'clock, P. M. Patient tranquil, and out of danger, but he remained weak and feeble, with little appetite or desire for food; soreness of the limbs and occasional nausea continuing up to this time. The *malaise* or lassitude continued some weeks after I discontinued my visits.

Art. VI. *Remarks on Spinal Irritation, illustrated by Two Cases.*

By John W. Malone, M. D.

THE fact that spinal tenderness, or irritation primarily or secondarily developed, is the cause of many neuralgic or nervous affections, cannot be doubted; as the practical observations of many of the American physicians, as well as those of the continent of Europe will testify. It has been but a short time since the attention of the profession was first called to this subject, particularly by some original essays from the English practitioners. Since then, the works of Teale, Tate, and Abercrombie, have appeared before the public,

relating facts obtained by a careful practice and observation, with such candour and simplicity, that the medical world has been excited to ascertain whether locality could be given to what might be termed "general disorders of the nervous system," and a cure effected by the simple application of tartar emetic ointment, or other irritating applications to the spine; and the result of the practice has been a happy confirmation of the remarkable truth, that an intimate and evident relation exists between many of the chronic nervous affections and an irritation of the spinal cord, inducing the anomalous and diversified symptoms of hysteria, and confirming the distressing and painful sensations of chronic rheumatism, &c. This important pathological fact will effect a most important change in the classification of these diseases. The vague and unmeaning names under which they have been placed will be exploded, and instead of being ranked among the "opprobia medicorum," their nature will be well understood, their treatment simple and rational, and permanent cures almost always effected.

The following case occurred in my practice last winter.

On the 27th of February last, I visited a negro man belonging to Mr. C. of this place, age about thirty, sound constitution, and hitherto of good health. The symptoms were head-ache; severe pain in the right inferior part of the chest, neck, and upper extremities, and general uneasiness of the lower; pulse full and slow; anorexia; skin warm and somewhat arid; tongue moist, and coated with a white fur on its posterior part; respiration hurried, together with a dry, hacking cough. Thinking it might be an incipient pleuritis, as he had been sleeping out in a cold, damp atmosphere, I bled him, which relieved the pain in the head, but not in the side. Ordered ol. ricini, ℥j. and left a diaphoretic to be given at bedtime, together with warm foot-bath.

28*th.* Slept badly the preceding night; slight uneasiness in the head; still pain in the side and extremities; pulse natural; natural warmth of the skin; tongue moist and furred. As the oil had not operated, I gave him the following in syrup. Cal. rhubarb, jalap, āā. five grains. Ordered rest and abstemious diet. I visited him in the evening; the medicime had operated kindly without any amelioration of the most prominent symptoms. I cupped him on the side, ordered his feet and legs to be bathed, and an anodyne draught at bedtime.

March 1*st.*—No amendment. Seeing the inefficiency of my remedies, and detecting no disease of any particular character in the abdominal or thoracic viscera, I was induced to believe it seated in

the spinal marrow. I immediately made an examination, and upon pressure along the cervical column, I found two tender spots; upon pursuing the examination, I found another very tender spot about the fifth or sixth dorsal vertebræ, which, upon pressure, increased the pain in the side; there was also tenderness in the lumbar region. I immediately applied small strips of blistering plaster, knowing they would act sooner than the tartar emetic, and with equal benefit. Ordered abstemious diet and the recumbent posture.

2*d*. Slept well during the night; feels no pain; has appetite, and says he is able to attend to his business.

In this case the involvement of other organs than the one primarily affected is manifestly evident, and the prompt subsidence of the disease on topical applications to the spine is strikingly exemplified; and it now belongs to the future investigations of the profession to establish the fact, whether spinal irritation may not be considered as the source and cause of many of the anomalous and irregular diseased actions of the organism. Chronic functional disorders of the thoracic and abdominal viscera frequently present themselves, of an anomalous or preternatural character, yielding to no general treatment, and eluding our strictest research for their local habitation or focus of irritative action. Many of these cases, we think, may be referred to an irritation of the medulla spinalis, and with great probability the application of remedies to that part would cut short and finally cure many of these disagreeable and chronic complaints. That this is the fact, numerous cases considered incurable, which have been cured by looking to this source and directing our treatment accordingly, abundantly proves. Intractable rheumatism, paralysis of the extremities, chronic uterine complaints, acute nervous pains in the muscles, cramps in the stomach, and chronic ophthalmias, have all yielded speedily and promptly to a few cups, or irritating agents to the spinal column. The functional and organic derangements of the internal organs may, through the sympathetic ganglia which preside over their internal actions, induce irritations of the spinal cord, by the transmission of irritation from the alimentary mucous membrane, or from the ganglia themselves, and render disease permanent and chronic, which will resist the efficacy of all internal remedies, but are readily and promptly counteracted by remedies adequate to remove the secondary development of irritation. That chronic intermittents are often kept up from this circumstance, we entertain no doubt, as the experience of others, and a slight one of our own will testify. My attention was drawn to a case of this kind, which came under my hands in 1832.

Case II. Mrs. N. a lady of sanguine temperament, age thirty-five, had an attack of bilious remittent fever in the summer, from which she recovered after a confinement of two weeks. She had taken an excessive quantity of calomel, which enervated her system, and left her stomach in a state of subacute inflammation. When I saw her, which was in the fall, she had chills every day, and sometimes every other day. She was very feeble; tongue red, with slightly coloured fur; skin rather flabby; bad appetite and indigestion, for nearly all articles of food soured on her stomach; she had frequent nausea, particularly just before the chill. I gave her the cold infusion of chamomile as a tonic, and opened her bowels with ol. ricini. I saw her again the next day, about an hour before the time of the chill—she was complaining of pain in her back and general aching sensations all over her. After some reflections on her case, I was induced to believe it kept up by spinal irritation secondarily developed. I made an examination, and found the lower part of the neck and upper half of the dorsal column tender in several places. As her chill appeared to be coming on, I applied a large mustard cataplasm between her shoulders, and continued the chamomile infusion in moderate doses. The result of my remedy was the prevention of the chill. She applied the cataplasm once afterwards, and has had no chill since, but has continued to improve, and with gentle tonics and exercise was soon restored to perfect health.

The application of cataplasms to the spine in obstinate intermittents is quite a common thing in the country, and it was from observing their beneficial effects once before, that I was induced to apply them at this time to remove an irritation which *might be developed*, and which frequently, in our opinion, keeps up the disease. From the forgoing considerations, and from many facts which can be adduced, we are inclined to believe that *intermittents* are frequently continued, if not actually induced by spinal irritation; at least it is a subject well worth the consideration of gentlemen of the profession, who wish to advance our divine art, and do good to mankind.

Quincy, Florida, December 8th, 1834.

ART. VII. *On Rupture of the Heart and the Morbid Appearances associated with it.* By EDWARD HALLOWELL, M. D. [Read at the Medical Society of Philadelphia.]

HAVING had, sometime since, an opportunity of seeing a case of rupture of the heart, I have thought that in presenting it to the notice of the society, it might not perhaps be uninteresting to some of the members to give an abstract of what is known respecting that affection.

Spontaneous rupture of the heart is of rare occurrence. Neither CORVISART, LAENNEC, BERTIN, nor SENAC, whose experience in cardiac diseases was very great, met with a single case of it. The number of well-attested observations amounts perhaps to sixty. I have collected thirty-four of them in various publications, with but little research. In the history of these cases, which is often very imperfectly detailed, it is stated that the patients had been affected for a greater or less length of time, with palpitations, and had experienced frequent attacks of lipothymia, or complained of pain beneath the sternum and tightness and weight across the chest, &c. these symptoms being no doubt dependent upon one or more of the morbid conditions to be hereafter noticed. The first intimation of the nature of the disease in question, is the very sudden death of the patient. Death, however, does not always take place suddenly. A case is related by M. ROSTAN, where the patient is said to have lived fifteen years after the accident, and died at last of rupture in another part of the organ. The following were the post mortem appearances in this very extraordinary case. "The pericardium appeared irregular at its surface, and on lifting it up, blood was easily perceived, effused at its posterior part. It was carefully opened, and found adhering to the heart, not immediately, but by means of several albuminous layers more or less dense. In order to ascertain the source of the blood effused in the posterior part, it became necessary to detach them. On arriving at the heart, an irregular rupture was perceived, an inch and a half in length. The fissure was evidently recent, but on its left, in an extent of five or six lines each way, the substance of the heart was destroyed, and replaced by a fibrinous concretion, which appeared to be confounded with the tissue of the organ."* The period intervening in these exceptional cases, between the occurrence of the rupture and the death of the patient, is generally of very short duration, lasting but a few hours. The laceration, for the most part, is found to be very oblique, and traversed

* Nouveau Journal de Medecine, 1820.

by fibres adhering to both sides of the rupture; the flow of blood being further arrested by the formation of a coagulum or fibrinous concretion, plugging up, as it were, the opening in the ventricle.* A case of this kind is recorded by M. Cullerier, in the XII. Volume of the Journal de Medécine, for September, 1806.

When death occurs instantaneously, which it almost invariably does, (thus differing from apoplexy, where several hours ordinarily intervene between the attack and the death of the patient,) it is in consequence, not of the amount of blood effused, for this frequently does not exceed ten or twelve ounces, but of the pressure exercised upon the organ by the surrounding mass of blood, thus arresting its action, and stopping the supply of blood to the various parts of the system.†

Rupture of the heart seldom occurs but in persons advanced in life. It has been stated, that, with the exception of several cases in children, not well authenticated, all the subjects who died of this terrible disease, were over fifty-eight years of age. To this law, however, if such it be, there must be exceptions. Of the thirty-four cases I have collected, the age is precisely stated in twenty-three only. Of these, nine were between seventy and eighty, six between sixty and seventy, five between fifty and sixty, two between forty and fifty, and one between twenty and thirty, (from dilatation.)

It is said that men are more frequently the victims of this disease than women. It is asserted by M. Pigeaux‡ in a report upon a case of rupture presented to the Anatomical Society of Paris, that the proportion is as ten to one. This is no doubt incorrect. Of the thirty-four cases I have mentioned, there were sixteen males and eighteen females.

* Rostan, Traité de Diagnostic, &c. t. II p. 625.

Some curious cases are recorded of prolongation of life after *penetrating* and other *wounds* of the heart. A highly interesting case of this kind is mentioned by Morgagni, in his fifty-third epistle, of a man who was stabbed between the fifth and sixth ribs. The knife penetrated the pericardium and right ventricle, as well as the mediastinum and diaphragm, yet he lived eight days. Those who are curious in such matters, may find a large collection of similar cases, taken from the old authors, in a paper by Professor Coxe, in the eighth number of the American Journal of the Medical Sciences. Some of these cases, however, are rather problematical, and require more than an ordinary quantum of faith on the part of the reader; of these, I think, is the one from Bartholinus, of a man who attentively contemplated his own heart after it had been cut from his body, and another of a man who was heard to pronounce several words of prayer after the executioner had his heart in his hand.

† Andral, Anatomie Pathologique, tom. II. p. 306.

‡ Bulletin de la Societé Anatomique, No. XLIII.

The rupture occurs, for the most part, in the left ventricle, in its anterior wall near its middle. In the above-mentioned cases, the place of rupture is stated in thirty-one. Of these there were three ruptures of the right auricle, none of the left, two of the right ventricle, and the remaining twenty-six of the left ventricle.

Although symptoms of the disease of the heart may have existed for some time in a patient who has died suddenly, rupture of the organ can only be surmised, until the true nature of the case is revealed by a post mortem examination. On removing the sternum and cartilages of the ribs, the pericardium is found greatly distended, elastic to the touch, and presents a bluish appearance, so that before opening it, rupture may be predicted, particularly by one who has seen a similar case. On cutting into the cavity, a beautiful sight is presented. The author of one of the cases, in describing it, says, "The heart was entirely concealed by an envelope of coagulated blood, which presented so imposing an appearance, that I stood for some minutes surveying it before I could proceed with my examination." The blood, sometimes in a partly fluid state, is more frequently coagulated, and of a dark black colour. The coagula are sometimes separable into layers, presenting a foliated appearance, but there is, most commonly, a single clot, varying in weight from four or five to fifteen ounces, or more. The size and form of the rupture vary with the disease producing or accompanying it. In several instances it is stated to have been large enough to admit the little finger. It ordinarily consists in a slit, sometimes so small as to be hardly perceptible, at other times varying from half an inch to an inch or inch and a half in length, and frequently diminishes in size as it approaches the inner surface of the heart. Sometimes there are two external openings, whose tortuous canals at length unite and form a single communication with the cavity of the ventricle. These openings or fissures are generally parallel with the longitudinal axis of the heart, and are sometimes numerous. A case was presented to the Royal Academy of Sciences by M. Andral, in which there were five different perforations in the posterior wall of the left ventricle.

The tissue of the heart, surrounding the place of rupture, will be found in one of the following conditions.

1. In a perfectly healthy state.
2. In a state of ulceration.
3. Hypertrophied with or without ramollissement or softening.
4. Softened to a greater or less extent.
5. Dilated and thinned.

6. To have become the seat of a partial dilatation.

7. To have undergone a fatty degeneration.

Cases of the first kind, or where the muscular parietes are perfectly healthy, must be exceedingly rare. I have stated it upon the authority of Andral, but I confess that I have never met with a *perfectly* satisfactory example.*

Of cases of the second class, or those produced by *ulceration*, numerous examples are recorded. Morand, in the *Mémoires de l'Académie des Sciences*, for 1732, describes that of the Dutchess of Brunswick, of the same family as George II. of England, who also died of rupture of the heart in the act of defecation. On examination there was found an ulceration through the walls of the *right* ventricle, which had commenced externally and gradually penetrated within the cavity. The structure of the organ was otherwise unimpaired. Two cases from ulceration are recorded by Morgagni—one that of a woman who had suffered some time from palpitation of the heart. Having raised herself in bed to eat her dinner, she exclaimed, "I am dying," and almost instantly expired. The ventricle was perforated at the apex by a small ulcer. The other is that of a Knight, sixty-five years of age, who had been long affected with ulcers of the legs, which were healed up. "He was subsequently attacked with slight rheumatic pains, and at length complained of

* In an article recently published in the *Archives Générales de Médecine*, August, 1834, p. 501, by M. J. E. Dezeimeris, entitled *Recherches sur les ruptures du cœur*, five cases are quoted of rupture of the heart without previous lesion of its tissue. The first is taken from the *Nov. Act Acad. Nat. Curios. t.* 17, *p.* 212. It was that of a savant, who had complained for some time of hypochondriacal symptoms. He was suddenly seized in Nov. 1773, with violent pain in the shoulder, in the arms, and the whole of the left side of the body. The pulse was small, feeble and slow. He died in the night, fifteen hours after the commencement of the attack. The autopsy as well as the previous history of the case is exceedingly meagre. The left ventricle was ruptured—*two fingers could be easily introduced through the rupture.* The heart, it was stated, was neither ulcerated nor thinned, but very strong, *(robustissimum erat.)* No notice is taken of the ventriculo-aortic orifice. Was not this a case of hypertrophy with partial softening? The other cases, which we have not time to analyze, are more or less objectionable. In the second, the heart is acknowledged to have been very voluminous. In the third, which M. Dezeimeris considers the most decisive of the cases, which had come under his notice, the heart was somewhat pale, surrounded by a small quantity of fat at its base, and like the other portions of the muscular structure of the body, rather softer than is usual after death. "The aorta appeared somewhat narrower than the pulmonary artery—the contraction, was not confined, however, to any particular portion of it." The *thickness* of the wall of the ventricle is not stated.

pain beneath the sternum, and in the arms, with some confusion of mind. About the middle of the same day he was partially relieved; and though his pulse was languid he was cheerful. He afterwards complained of a sensation of fumes ascending to the head, and also of tightness across the chest, as well as restlessness and anxiety. After these symptoms had continued for some time, he became pale and agitated, and suddenly expired. There was a fissure of half an inch in length in the longitudinal diameter of the left ventricle. The fibres in the circumference of the rent were destroyed by ulceration." 27 Ep.

Ulceration may commence on the external or internal surface of the heart. A very singular case of the former kind, is recorded in the *Mém. de la Soc. de Médecine, for* 1776. The subject of it was a girl, æt. 22, who had been put in the House of Refuge at Perpignan for bad conduct. She complained, on her entrance, of weight within the chest, opposite the left mamma, between the fifth and sixth ribs. She was at the same time affected with various syphilitic symptoms, for which she was put upon an anti-venereal treatment. The syphilitic symptoms disappeared, but she still complained of her chest, and at the expiration of six months, of a sharp pungent pain, proceeding from the external part of the left mamma to the left side of the sternum. The pulse was small, frequent and irregular. During the height of the pain, it was suspended several seconds—she fainted frequently. Decubitus was at times utterly impossible. She remained seated, a little inclined backwards, and to the left side, with her head bent upon her chest. She died at the end of two years. The autopsy presented the following lesions. The heart was affected with a kind of carcinoma;—but a few shreds of pericardium were remaining. On the posterior and external face of the heart was a large ulcer, occupying the whole extent of the two ventricles. At the bottom of it, nothing was seen but a few muscular fibres, forming a very slender web, which was ruptured by a slight pressure of the finger. The substance of the heart around the ulcer was much indurated, presenting the aspect of scirrhus. The heart was eleven inches and eight lines in circumference, measured around the auricles, and the ulcer nine inches two lines and a half.*

The examples I have quoted appear to have been true ulcerations of the heart, but a large proportion of the cases described by authors are so vaguely and imperfectly detailed, that it may be fairly questioned whether they were not the result of simple laceration, accompanied with softening of its tissue.

* Op. Cit. also Andral, Anat. Pathol. t. II. p. 308.

The next form is that of *hypertrophy, with or without ramollissement.* When the latter of these states exists, it is often found to be connected with ossification and contraction of the ventriculo-aortic orifice. The mitral valves being closed to prevent regurgitation, it is easy to conceive, that the blood finding no egress, is powerfully acted upon by the ventricle, which stimulated to violent contraction by the double impulse of powerful mental excitement, and the reäction of the mass of fluid within its cavity, may give way, and the blood be effused within the pericardium. In one of the cases recorded, it is also stated that the arteria innominata at its origin was so diminished in its diameter by atheromatous deposition between its coats, as to leave a passage not more than one-eighth of an inch in diameter, and the left subclavian artery was in like manner diseased, and diminished one-half its calibre. Softening, associated with hypertrophy, may be either general or partial,—it may be confined to the muscular structure immediately around the rupture, or it may exist in patches. The substance of the heart in the place of rupture, is sometimes reduced into a soft yellowish pulp, without any trace of muscular fibres. It is the opinion, I believe of M. Blaud, who has written a memoir on the subject, which I regret I have not been able to procure, that this is the form most commonly met with. That the softening generally assumes this gelatinous, pulpy appearance, is by no means evident from the history of the cases I have examined. It is stated to have existed in but one of these; but it appears to be highly probable that partial ramollissement, presenting the general characters we shall presently describe, coïnciding with a greater or less degree of hypertrophy, are the morbid conditions of most frequent occurrence. I have not analyzed those cases with a view to establish this point, so far as such an analysis would go, for in a number of them it is not stated whether ramollissement existed or not; and it may be easily conceived that such a morbid state existing in a circumscribed spot, might remain unnoticed by an inexperienced or careless observer.

The heart may be simply *softened* to a greater or less extent. This morbid condition of the heart, was first particularly noticed by Laennec, who considered it an affection *sui generis*, produced by a derangement of nutrition, by which the solid elements of the tissue are diminished in proportion as its liquid, or semi-liquid elements augment.* This opinion is controverted by M. Bouillaud, in the work published by himself and M. Bertin, on diseases of the

* Laennec, Traité de l'Auscultation, t. II. p. 144.

heart. He ascribes it, under whatever form it may present itself, to inflammation. "A contrary opinion cannot be assumed," says he, "without infringing the laws of analogy, inasmuch as softening of the brain, of the uterus, of the liver, of the spleen, and of the kidneys, is generally acknowledged to be the result of inflammation."* That in some instances ramollissement is a product of inflammation, there can be no question. A most striking and beautiful example of this kind is described by Dr. LATHAM.† It occurred in a boy, æt. 12, who was in perfect health on Saturday night, and died on Tuesday afternoon at 2 o'clock. "The muscular fibres of the heart were dark coloured, almost to blackness, loaded with blood, soft and loose of texture, easily separated and torn by the fingers; and upon the cut edges of both ventricles, small quantities of dark coloured pus were seen among the muscular fibres. The internal lining was of a deep red colour, and the pericardium intensely inflamed, containing flakes of coagulated lymph, floating in a turbid scum, and having its surface covered with a thin layer of reticulated lymph."

But it may be fairly questioned, whether in all the organs above mentioned, and the brain more especially softening is invariably an effect of inflammation I have seen nearly the whole of the right hemisphere of the brain, converted into a pulp of a perfectly white and soft cream-like consistence, when no trace of inflammation could be observed in the immediate vicinity. It is therefore probable that at least one of the forms of softening exists independently of inflammation, being, as Lænnec described it, a disease sui generis, and consisting, perhaps, in some modification in the action of the capillary vessels, with which we are at present unacquainted.

Two species of softening are described by Laennec, one with increased intensity of redness, the colour being sometimes that of a deep violet, and the muscular parietes presenting an excess of blood. The other characterized by diminished redness—the heart containing less blood, and being often of a pale yellow colour, compared by Laennec to the palest colour of dead leaves.

The tissue of the heart, in a state of ramollissement, is extremely flaccid, its walls collapsing when cut into, and assuming a flattened shape. Its texture is friable, so much so, as often to be torn by the slightest pressure. It is this form of ramollissement which so often accompanies rupture of the heart.

* Bertin et Bouillaud, Traité des Maladies du cœur, et des gros Vaisseaux, p. 397.

† London Medical Gazette, Vol. III.

The parietes of the heart may be dilated, and thinned. A case of this kind is related in the Journal of Morbid Anatomy, Vol. I. It was that of a young lady, æt. 24, who had experienced the ordinary general symptoms of disease of the heart. She was attacked at length with symptoms of cerebral congestion, bled ℥xxij. and died immediately afterwards. The *right auricle* was ruptured near the superior vena cava. Its parietes are stated to have been thin and flaccid.

Two cases are given in the interesting memoir of M. Dezeimeris. One was a rupture of the right auricle, of which we have already adduced an example.

In the month of March, 1811, a servant whilst engaged in making chocolate for his master, died suddenly. The right auricle was ruptured, and very much dilated. He had never complained of palpitations, and his pulse had not been intermittent, (I. Schæffer, *Der Zeit. und Volskrank heiten in Hufeland's Journal, etc.* 1811.) The other is that of a man, æt. 54, who for several years had observed that his pulse was slow. He was occasionally affected with vertigo, and a sense of constriction about the heart. His health had previously been good. These symptoms increased in June, 1822, but were moderate until February, 1823, when they were again brought on by indigestion and powerful mental excitement. His pulse, which had at first beat forty in the minute, intermitting at the thirtieth, now beat but twenty, with an intermission after the fifth beat, (carb. ammonia, rhubarb, tartarized antimony, V. S. and derivatives;) amelioration rapid. In March, after a paroxysm of anger, the patient became morose and feeble; was then seized with gastric symptoms, and passed the night without sleep. He was afterwards seized with vertigo, and experienced great anxiety, with a sense of suffocation. The slightest exertion gave rise to palpitations. These symptoms were moderated by the use of the remedies above-mentioned, together with the infusion of digitalis with hydrocyanic acid. An œdematous swelling appeared about the face and lower extremities, but the pulse became more frequent; the respiration more easy, and he slept well. He was now ordered tonics, (Cinchona—lichen.) At the end of March, a strong moral emotion renewed his former symptoms, which were now, however, greatly aggravated; debility extreme; inability of expressing the most simple ideas; respiration very difficult; hæmoptysis. In the beginning of April, return of suffocation, which was relieved by the use of serpentaria and arnica, a mixture of sal ammoniac and tartarized antimony, with rhubarb, and by the application of a blister; but the patient having had the imprudence to go out on the 13th of

April, whilst the wind was high, was seized with the same symptoms, and died suddenly the next day.

Autopsy.—Slight adhesion of the pleura; lungs healthy, as well as the abdominal viscera; heart double its ordinary size; the large vessels greatly dilated, and the coronary veins varicose; considerable effusion of sanguinolent serosity in the pericardium. The right cavities of the heart were greatly dilated, and their walls very thin. There was a transverse rent in the right ventricle, five lines in length, exteriorly, and two only on the inner surface. Polypous concretion between the tricuspid valvules. Left side of the heart thickened in every direction. Columnæ carneæ greatly hypertrophied. (J. S. Martini, *Medizinische Beobachtungen. Hufeland's Journal, der practischen Heilkunde, Avril*, 1833; *et Kleinert Allgemeines Repertorium, etc. Janvier*, 1834.)

Rupture from *partial dilatation* of the heart, is the rarest form of the disease, with the exception, perhaps, of a true fatty degeneration. A case is related by Dr. Bignardi, in the *Annali Universali di Medecina, of Milan*, for 1829. It is that of a young lady, apparently in good health, who died suddenly. On examination, the cause of death was found to be a rupture of a small aneurismatic tumour at the origin of the aorta. The parietes of this tumour, it is said, consisted only of the internal and external lining of the heart, the muscular tissue around being softened. Of this form of disease, (partial paralysis,) about a dozen cases are on record. Other examples are no doubt to be met with in different museums. Ten of these cases have been collected and analyzed by M. Breschet, in the second number of the third Volume of the *Répertoire d'Anatomie*, for 1827. Another is described by M. Regnaud, in an interesting article on this subject, published in the second Volume of the *Journal Hebdomadaire de Médecine*, for 1829.

The celebrated French tragedian, Talma, who died of an almost total obliteration of the rectum, was found to be affected with this disease. It is stated by M. Biett, who attended him, that in the left ventricle of the heart, there was an aneurismal pouch of the size of a small egg, filled with fibrinous layers, tough and adherent, the walls of which appeared to be formed by the double thickness of the two laminæ of the serous membrane of the heart.*

The following are the inferences drawn by M. Breschet, from an examination of the cases of the disease in question, to which he gives the name of false consecutive aneurism of the heart.

* Revue Médicale, January, 1827.

1. That the heart may be affected with aneurism of a different nature from that ordinarily described.

2. That this disease ordinarily affects the left ventricle.

3. That it exists most commonly at the apex of the heart.

4. That this aneurism, from the mode of its formation, the state of its parietes, and the contents of its cavity, closely resembles false consecutive aneurism in the sense given by SCARPA to the term aneurism.

Of the cases collected by Breschet, one occurred to Corvisart, and two to Berard, the present Professor of Physiology in the School of Medicine at Paris, who showed them both to Laennec. That of Corvisart was a young negro, æt. 27. The upper and lateral portions of the left ventricle were surmounted by a tumour almost as large as the heart itself. The inside of the tumour contained several layers of very dense coagula, perfectly similar to those which fill a part of the cavity of aneurisms of the extremities. The cavity communicated with the inside of the ventricle by an opening of small width, whose contour was smooth and polished. The substance of which the tumour was formed was of the consistence of cartilage, but it preserved the appearance and colour of the muscles.

In the cases observed by M. BERARD, and described in his Thesis entitled *Dissertation sur plusieurs points de pathologie*, the tumours were at the apex of the heart and about the size of a small duck's egg. They are analogous in many respects to that of Corvisart, the cavity being lined with yellowish fibrinous concretions, disposed in concentric layers, and strongly adherent to the walls of the sac, which in this case were evidently continuous with the fleshy fibres of the heart on one side; but at the spot where the tumour extended to more than a finger's breadth beyond the septum ventriculorum, and the apex of the right venticle, its parietes appeared to be formed by the pericardium, strengthened internally by the fibrous layers, and externally by means of a very dense cellular tissue, uniting the two surfaces of the pericardium. This adhesion existed throughout the whole surface of the heart.

In the second case observed by M. Berard, the circumstances were nearly similar, the fibrinous concretions being softer and more recent, and the adhesions between the pericardium existing only in the spot corresponding with the tumour.

A case of this rare form of disease came under my own observation, while engaged in the study of diseases of the heart, in the wards of M. CRUVEILHIER in Paris, at the Salpetriére, during the winter of

1832, with my friends M. Bergeon, Interne of the hospital, and Mr. Walker of Leeds, England.

The patient was an old woman, eighty-two years of age, affected with paralysis. She was admitted into the hospital on the 15th of November, 1832, and placed in No. 3, Salle St. Alexandre. At this time she experienced great difficulty in breathing, and had cough, with bloody expectoration. But little could be learned of her previous history. One of her friends stated that she was frequently ill, and suffered from violent attacks of palpitation and suffocation. Her right arm was much weaker than the left, (she frequently let fall objects held in her right hand,) and the fingers were habitually bent. It was impossible to ascertain when she was attacked with paralysis. The pulsations of the heart were distinctly heard, on applying the ear to the præcordial region, but there was nothing particularly observable in the sounds. No pain in the side. Pulse slightly accelerated, and rather feeble. She died eight days after admission.

Autopsy, performed thirty hours after death.—Brain. On removing the brain, a fine membrane was torn, situated on the anterior and exterior surface of the left hemisphere. It contained a small quantity of transparent serosity and extended to the vicinity of the lateral ventricle. It might have contained a large walnut. Its parietes, lined by an internal member, were of a slight yellow colour. The rest of the brain was of a very firm consistence. A considerable quantity of serosity escaped during the autopsy from the ventricles and spinal canal, when the body was placed in an inclined position.

Thorax.—Effusion of limpid serosity to the amount of four ounces in the right, and one ounce in the left side of the chest. No pleuritic adhesions or false membranes on either side. Superior lobe of right lung engorged posteriorly. Left healthy. The pericardium contained a small quantity of transparent serosity. The heart was of the ordinary size, but singular in appearance, its point being very saillant, projecting anteriorly, and covered with a pretty large quantity of fat. The greater part of the fat was removed with care, which reduced the sac to a lamina of very slight thickness. The left ventricle was then opened transversely, and a second longitudinal incision made as far as the orifice of the tumour, which was about two and a half lines in diameter—a female catheter being introduced with great facility. It resembled the neck of a herniary sac; the tumour is of a roundish form, slightly conical, the point projecting forwards. Its transverse diameter measured about an inch—its longitudinal fifteen lines. Having continued the perpendicular

incision to the summit of the sac, the fleshy columns of the ventricle were seen to advance within its interior, becoming much thinner. The muscular structure of the heart extended as far as the summit, being there but a line, or less, in thickness. It might almost be said that the inner surface was immediately in contact with the pericardium. Its cavity contained a quantity of liquid blood, surrounding a blackish coagulum of the size of a filbert. This coagulum did not adhere to the sac, and was not formed of concentric layers, as in aneurism of the arteries. The left ventricle was slightly hypertrophied, its cavity appearing to be of the natural size, (excentric hypertrophy.) The right ventricle seemed slightly dilated, and there was a considerable ossification about the left auriculo-ventricular orifice. Several smaller ones were observed at the ventriculo-aortic orifice, the largest in the middle sigmoid valvule. The orifice, however, was not sensibly contracted. The coronary arteries were dilated—a female catheter was introduced without difficulty.

Abdomen.—Duodenum highly injected, as well as a considerable extent of the ileum and several points of the ascending colon.

Laennec attributes the production of partial dilatation of the heart to ulceration of its lining membrane. This appears to have been the case in the present instance.

The above specimen was deposited in the museum of the faculty of Paris, where there is another, the tumour being towards the base of the ventricle.

It is stated by Breschet, that these aneurisms are usually found at the apex of the heart. This seems to require confirmation, seven cases at least being known to exist in museums, or described in books where the tumour was found at the side or base of the ventricle.*

We now come to the last head, or that in which the *heart has been more or less changed into fat.*

The accumulation of fat about the heart is sometimes very considerable, enveloping its substance completely—it is generally found, however, around the base of the heart, deposited between its muscular parietes and the pericardium, and along the course of the coronary vessels. Corvisart and Laennec are both of opinion, that this fatty state may exist about the heart, without interfering with the healthy performance of its functions. There is, however, another state totally different from the preceding, and which is thus accurately described by Laennec. "The *fatty degeneration* of the heart is the infiltration of its muscular substance by a matter presenting all the

* M. Reynaud, Journal Hebdomadaire, t. II. p. 367.

physical and chemical properties of fat. It is an alteration precisely similar to the fatty deterioration which Haller and Vicq D'Azyr observed in the muscles. I have never, says he, met with this alteration but in a very small portion of the heart, and only towards the point. The substance of the heart in the spot thus altered is paler than in the other parts, and instead of the red colour, which is natural, it assumes a yellowish colour, analogous to that of dead leaves, and nearly similar to that observed in certain cases of softening."*

A case of this kind came under my notice, and that of the gentlemen whose names I have mentioned. It occurred within two weeks of the former, thus confirming a remark made by M. Rostan, that, in large hospitals, it sometimes happens that the rarest affections are met with in a short interval of time, and do not perhaps occur again for years.

Marie Madelaine Jean, the subject of this observation, an old woman seventy-six years of age, was found dead in the privy. One of the girls who saw her enter, and heard her fall, called out for assistance. She was seen by M. Bergeon, half an hour after the accident, when she was yet warm, but exhibited no signs of life. The lips were livid; the mouth wide open; the face much discoloured, and the eyes convulsed upwards. M. Bergeon questioned those who saw her daily, and was informed that she walked with much difficulty, and that her body was constantly bent forward, and to the right side. She had supped the evening before her death, with a good appetite, and did not complain of pain.

Autopsy, forty-eight hours after death.—The teguments of the cranium contained but little blood. The upper part of the skull, on being removed, brought away with it the superior portion of the longitudinal sinus. The cavity of the sinus was nearly obliterated, and contained no blood. The great falx of the brain contained four or five ossifications,—one of them was two inches in length, and one in breadth—the surface corresponding to the brain was unequal and mammillated—the others situated posteriorly were not voluminous, and less remarkable. The meninges and brain itself examined with great care, presented nothing worthy of notice. Some of the gentlemen present, thought there was a softening of the thalamus nervi optici of the left side; but this was by no means evident. The vertebral column was laid open, and medulla spinalis found to present a natural aspect and consistence, but on its inferior and posterior surface, there were found three ossifications,

* Traité de l'Auscult. t. III. p. 168.

presenting a striking analogy in appearance with those observed in the falx, but of smaller dimensions.

On opening the thorax, the pericardium was seen greatly distended, and presenting a black appearance. An incision being made into it, the heart was displayed, surrounded by an enormous clot of black blood. This was removed in one piece, and appeared to weigh about ℥xii. Before removing the heart from the chest, we examined, with care, the spot at which the rupture took place. There were too small linear openings, three or four lines in length, separated from each other by an interval of three lines, situated on the anterior face of the left ventricle, one-fourth of its length from the apex. An attempt was made by M. Cruveilhier to penetrate within the cavity of the ventricle through the opening but without success. A longitudinal incision was now made through its parietes, and the cause of the obstruction at once made evident in their narrow and sinuous course, uniting near the centre, and communicating with the cavity of the ventricle by a single opening. The thickness of the wall of the ventricle was but slightly diminished; around, and a little above the rupture, in the part corresponding to the external border of the ventricle, the tissue of the heart seemed less red than in its natural state, and especially than in the interior of the septum. There was at the same time a peculiar marbled appearance, exhibiting yellow streaks, not of a roundish form, whose direction was parallel with that of the fleshy fibres of the heart. These yellow streaks were not much softer than that part of the heart surrounding them, but the substance of the heart, when cut into thin slices, exhibited a friability, comparable to that of the liver. This condition of the ventricle appeared to be a fatty degeneration. The right ventricle was covered with a considerable quantity of fat; it presented in other respects nothing worthy of note. The auricles were healthy, and the different orifices of the heart afforded no appreciable alteration. The lungs were healthy, with the exception of a slight engorgement at the posterior part of the right lung. Stomach and bowels healthy. In the broad ligament of the uterus, on the right side, there was a tumour of the size of an egg. It was irregular in its form, and its hardness such that it could not be cut into with the scalpel, its consistence being between that of scirrhus and ossification.

The muscles of the back, situated along side of the spine, were pale and discoloured, and appeared to be entirely converted into fat—their fibrous structure, however, was still observable. This morbid appearance was more fully developed in the posterior part of the legs. The gastrocnemii and solæi of the left side were entirely converted into fat,

and perfectly white,—traces of fibres, however, were still distinctly seen—those of the opposite side presented the same appearance, but not to so great a degree—they had not the red colour of ordinary muscles, but exhibited a marbled appearance, resulting evidently from the intermixture of fibres changed into fat, with those which had not undergone that alteration, being perfectly analogous in appearance to those of the heart already described. The muscles of the thighs were nearly healthy, but the sciatic nerve, as well as its divisions, were double their ordinary size, as compared with a subject of the same dimensions, lying upon an adjoining table of the amphitheatre. This augmentation in size arose from a superabundance of fat in their tissue.

Remarks.—The case which I have here detailed, presents a variety of highly important lesions. How far the bony depositions in the falx, and in the cellular tissue between the arachnoid and dura mater of the medulla were connected with the paralytic state of the patient, I will not stop to discuss. The appearance presented in the heart might, on a slight examination, have induced a belief in the existence of carditis, but this could not have been entertained for a moment. The yellow streaks we have described, had neither the consistence nor form of pus, nor did the heart, although softened in some places to a certain extent, present the deep red or violet colour which characterizes softening produced by the inflammation, as in the case of Dr. Latham; and besides, it were absurd to suppose that a lesion of that kind could have existed, the patient having the night previous enjoyed a hearty meal, and who, up to the hour of her death, did not complain of the slightest pain. It was in fact, a fatty degeneration, confirmed by an analogous state of the muscles in other parts of the body, resulting from a transformation of their fibres into fat.

There is another form of rupture which has been described under the name of partial rupture of the heart, consisting in rupture of the columnæ carneæ, and the tendons of the valves. Three cases of the kind are recorded by Corvisart, one by Laennec, and one by Bertin. The cases recorded by Corvisart were characterized by a sudden sense of suffocation, and the general symptoms of organic disease of the heart.

ART. VIII. *Quarterly Report of Diseases treated at the Wills' Hospital for the Blind and Lame, with some account of the Hospital.* By S. LITTELL, M. D. one of the Surgeons of the Institution.

AMONG the charitable institutions which so honourably distinguish Philadelphia, the traveller will delight to enumerate the WILLS' HOSPITAL for the indigent BLIND and LAME,—at once an ornament to the city, and a splendid memorial of private munificence.

It derives its name from its founder, the late JAMES WILLS, and is beautifully situated on Race street, opposite Logan Square, in the north-western part of the city. The Asylums for WIDOWS, and ORPHANS, and the Institution for the *instruction* of the BLIND, are in its immediate neighbourhood.

The building is eighty feet long, and fifty deep, with a piazza on the south side, twelve feet wide, running its entire length; and is sufficiently spacious for the accommodation of about seventy patients with their attendants. It consists of three stories,—a basement, a middle, and an upper; with an attic, twenty-four feet in width, and eighty in length. The whole building, including the piazza, is roofed with copper.

The front on Race street, is composed of coloured sandstone, and is ornamented with six Ionic pilasters supporting a proportional entablature and pediment. The entrance is approached by a flight of steps, surmounted by a Grecian Ionic portico of four columns. The remaining part of the building is composed of rubblestone, and rough cast in imitation of the front.

The interior of the house is divided into two principal divisions, one for the male, and the other for the female patients. The basement story, which is arched throughout, contains two dining rooms, two pantries, two bath rooms, a kitchen, a scullery, and a cellar. The middle contains an office and a parlour for the steward, a vestibule, a chapel, and six dormitories. The upper story has two chambers, one for the steward, and the other for the domestics, an infirmary, and eight dormitories. The attic is divided into two rooms of equal dimensions. The stairways are built of marble, with iron railings.

The house is heated by furnaces in the cellar, from which the warm air is conveyed into every room, through flues constructed in the walls, in addition to which, the dormitories also contain fire places.

The lot on which the Hospital is erected extends from Schuylkill Fourth street to Fifth, and from Race to Cherry street. It is bounded in front by a strong iron railing placed upon a wall of cut stone, two

feet high, forming a quadrant from each corner of the front steps, extending to the line of the street, from which the building recedes fifty feet. The original legacy of Mr. WILLS, being the residue of his estate after satisfying other bequests, was $108,396, 35, which at the period of the erection of the building, had accumulated to $122,548, 57; the whole expense including the lot, amounted to $57,203, 69; leaving a balance of $65,344, 88, the interest of which, subject to a small annuity, is available for the support of the institution.

The corner stone was laid on the 2d of April 1832, and on the 3d of March 1834, the Hospital was opened for the reception of patients, by an eloquent and impressive address from the Hon. Joseph R. Ingersoll. The following week divine service was performed for the first time in the chapel, by the Rt. Rev. Dr. White, the chaplain of the Revolutionary Congress, and the friend of WASHINGTON.

Persons applying for admission are expected to bring satisfactory evidences of respectable character, and indigent circumstances. By a temporary regulation, *pay* patients are also admitted, and the managers are thus enabled to relieve more persons gratuitously, than they would otherwise be enabled to do.

The addition of a few thousand dollars to its annual revenue, would extend the benefits of the institution to as many persons as could be accommodated within its walls; and it is hoped that a charity which so strongly appeals to the best sympathies of the human heart, will not be overlooked amid louder claimants for the public favour.

The situation of the Hospital could not have been more happily chosen It is in the healthiest part of the city, and the ample grounds connected with it prevent the encroachment of private dwellings, and secure a free ventilation. LOGAN SQUARE, directly opposite, has been lately enclosed and planted ; and in a few years, will furnish a cool, umbrageous promenade, where the eye of the invalid may repose on an extensive field of verdure, relieved at intervals by clustering trees, and rendered more grateful and refreshing by its contrast with the busy scene without. Already strangers afflicted with diseases of the eye, have sought its peaceful seclusion, in preference to the noise and bustle of our large hotels; and will propably do so in greater numbers, as the institution becomes better known, and its advantages more correctly appreciated.

Such is the WILLS' HOSPITAL for the indigent BLIND and LAME. In view of the inappreciable blessings which were to flow through succeeding generations, from his princely bequest, its benevolent founder might have exclaimed in the language of the immortal Roman: *Exegi monumentum aere perennius!*

Report.—In the treatment of no class of diseases is there so much empiricism as in affections of the eye; they appear to have been generally considered as without the laws which govern the lesions of other organs, and the greater number of physicians, unmindful of the principles which influence them in other cases, have been ever ready to wander from the path of patient observation, in the idle search after some remedy which should be of universal application. Our practice has thus become tentative and unsatisfactory, and though perhaps less so than formerly, is still far from reposing on a sound and permanent foundation. We shall find in these diseases, as in all others, that in proportion to the increase of our knowledge, will be the simplicity of our theories—the farrago of articles now employed, will give place to a few well appreciated remedies—success will be expected from the judicious and discriminating use of the means which we already possess, rather than from the invention of novel modes of treatment—and our practice will be at once attended with more satisfaction to ourselves, and advantage to our patients.

It is the design of the present writer, briefly to describe, what has fallen under his actual observation in the institution with which he is connected, and to relate his own practice as succinctly as possible, without unnecessary allusion to the opinions or practice of others. Should his example be followed by his colleagues, it is hoped that their united exertions may tend to divest the subject of some of the difficulties in which it has been involved, though they may not be so fortunate as to make any positive additions to the stock of information.

The greater number of cases admitted into the Hospital during the quarter ending September, 1835, were inflammations of the conjunctiva, Common, Catarrhal, and Strumous; the two former presenting in their history or treatment, few points requiring particular notice. For the most part, a light diet, occasional laxatives, a collyrium of acetic acid freely diluted, and applied by an eye-glass frequently through the day, a solution of the nitrate of silver, two grains to the ounce, dropped into the eye morning and evening, and in some cases the local abstraction of blood by cupping, were generally sufficient to effect a speedy cure. In mild catarrhal inflammation of *recent* occurrence, warm applications to the eye, with pediluvia and Dover's powder, at night, were frequently followed by very beneficial results. I have employed with much advantage the following formula:—R. Aquæ fluvial. Oss.; Plumb. super. acetat. ℈j.; Acid acet. ℥ij.; Tinct. opii, ℥j. M. It should be applied warm to the globe of the eye, by means of an eye-glass, and afterwards by a soft sponge

to the external surface of the palpebræ. When there is much pain, relief will frequently be obtained by elevating the temperature of the mixture, and exposing the eye to the vapour arising from it; or for this latter purpose, camphor mixture, with a much larger proportion of laudanum, may be advantageously substituted. Other anodyne fomentations, such as decoction of poppy heads, &c. would probably be equally beneficial, their efficacy depending perhaps as much on the union of warmth and moisture, as upon any medicinal impregnation. In severer cases, cold applications are commonly preferred, and the collyrium of acetic acid, one part to eight or ten of water, is one of the most soothing and efficacious. The astringent property of the acid may be seen in its effect in blanching the lips when eaten with lettuce, and it was from observation of this circumstance, that I was first led to employ it in inflammations of the eyes. Occasionally it was necessary to premise venesection, especially in robust and plethoric individuals; but in general the cure was readily accomplished by local means, and they were of course preferred.

Mr. Guthrie's ointment of the nitrate of silver, was not employed in any of the preceding cases, though so highly recommended by himself and others. The inflammation quickly subsided under the use of the remedies mentioned, and aware that diseases of the eye particularly, are not unfrequently protracted by the *nimia diligentia medici*, it was not thought expedient to make trial of others. It has appeared to me less applicable to sporadic cases, than to those of epidemic character; the former are more usually dependent upon some cause affecting the whole system, such as cold &c., and are generally benefited by a mild antiphlogistic treatment, while the causes whatever they may be, which give rise to the latter, are local in their operation, and the constitution is only sympathetically involved. Here there can be no question of the superiority of the ointment, or rather of the nitrate in its *solid* form, to all other applications.

In strumous ophthalmia we cannot expect much benefit from topical applications, while the constitutional treatment is neglected, and the latter will frequently be found the more important of the two. Several of the patients with this affection, were children, of delicate frames, and pallid appearance; in such cases, the leading indication appeared to be, to invigorate the system, and in proportion as this was effected, the eyes participated in the general improvement. The means employed with this view, were a light nutritious diet, the tepid bath, gentle aperients, and the blue mass, variously compounded with myrrh, and the sulphates of quinine and of iron. In some cases, a

treatment more decidedly tonic was demanded, and the sulphate of quinine, with the carbonate of iron, and cinchona or colombo, was prescribed. The local treatment consisted of cupping, where the symptoms required it, the collyrium of acetic acid, and solutions of the nitrate of silver, and the sulphate of copper. The ung. hydrarg. nitratis, diluted with lard, and the ointment of the red oxide of quicksilver, in the proportion of twelve grains to the ounce, were employed with advantage, especially where the lids were affected. Counter-irritation by cantharides and tartarized antimony, was tried in some cases, but it was thought that any benefit resulting from it was more than counterbalanced by the pain and inconvenience which it occasioned.

The foregoing treatment is exemplified in the following case. A lad, aged seven years, was admitted for inflammation and opacity of the left eye, consequent upon a severe attack of small pox; the opacity was situated immediately in front of the pupil, and nearly covered it; there was a red circle around the cornea, great intolerance of light, &c. Low diet, purgatives and cupping, with other appropriate local remedies were directed, and with decided advantage; but he subsequently relapsed, and a repetition of the treatment failed to produce the same effect. He was now put upon an alterative course, consisting of the blue mass alone, and afterwards in conjunction with quinine, iron, myrrh, &c. gentle aperients, and counter-irritation on the back of the neck. Under this treatment his improvement, though not without some interruptions, was upon the whole progressive; when, from some unknown cause, all the symptoms became greatly aggravated, a slough formed on the scite of the opacity, and fears were entertained lest it should penetrate the anterior chamber. He was ordered to be cupped, to have iced water constantly applied to the eye, and to take every three hours, one of the following powders:—℞. Sulph. quin. gr. xij.; Cinchon. pulv.; Ferri. carb. aa. ʒj. M. ft. ch. no. xij. The good effects of this treatment were strikingly manifested; the inflammation and intolerance subsided, the ulcer filled up, and at the present time, (eleven days since the occurrence of the relapse,) the little patient is better than he has been since his admission, and is still rapidly improving. After the first forty-eight hours, the powders were directed to be taken three times a day. No local application was used, with the exception of a weak solution of the argentum nitratis.

I have witnessed the advantage of a tonic course in several instances of conjunctival inflammation, not of strumous character, where the antiphlogistic plan had been carried too far. It is also apparent in

the affection, occasionally met with in hysteric females, which is principally characterized by pain or intolerance of light, without any appearance of inflammation. In such cases a rigid antiphlogistic treatment, confinement to a dark room, counter-irritation by blisters, tartarized antimony, and setons, &c. have been steadily pursued for several months, without any other result than that of enfeebling the general health. The appropriate remedies are the preparations of iron and bark, valerian, gentle aloetic aperients, out door exercise, &c.

Granular inflammation of the lids, the sequel of purulent ophthalmia, is sometimes a most intractable disease; a case of this kind of several months standing, was admitted under my care in the early part of the preceding winter. The palpebral lining was covered with granulations, and had an angry, livid appearance; the conjunctiva covering the sclerotica and cornea, was deeply implicated and changed in structure; the patient was suffering from chronic hepatic affection, and altogether presented an afflicting spectacle. I left him in the house, at the expiration of my term; at which time, notwithstanding one serious relapse following an attack of intermittent fever, he had recovered so far as to be able to read, and even to write a letter for one of his fellow patients. The treatment consisted chiefly in the application of the *solid* nitrate of silver, at intervals of two or three days, to the inner surface of the lids, with due attention to the constitutional symptoms. He subsequently relapsed again, and became much worse than he had previously been; the corneal conjunctiva was thickened, resembling the condition called *pannus*, and was even elevated so as to give the eye a staphylomatous appearance; it was so uniformly opaque that the iris was quite invisible; for several weeks he was totally blind, and a person who had no previous knowledge of the case, might have supposed his sight irrecoverably lost. He was emerging from this condition when I again took charge of the house, and has been steadily improving ever since. The corneæ of both eyes have become clear, he can again see to read and write, and is delighted with his escape from a situation which he once thought quite hopeless. The treatment for the last three months, has consisted in the use of the *solid* nitrate of silver, Mr. Guthrie's ten grain ointment,* and crystals of the sulphate of copper; towards its close, advantage was derived from the nitrate of silver in solution, the ung. hydrarg. nitratis diluted, and from directing upon the eye of the patient, while in a supine position, a gentle stream of cold water, several times

* The ointment must be made with lard, and not with spermaceti cerate, as directed by M. Guthrie, otherwise it will be found quite impossible to diffuse it over the surface of the eye.

a day. Concurrently with these means, the shower bath, and a course of tonic medicines, were employed with the effect of reëstablishing his general health.

In one case of sclerotic inflammation, catarrhal in its origin, and which had been unsuccessfully treated for several weeks, before it came under my notice, the patient was cured by the repeated application of cups to the back of the neck, together with the daily use of saline laxatives, and strict attention to diet. The cups were applied seven or eight times, at intervals of three or four days, four or five ounces of blood were abstracted each time, and the improvement was perceptible after each repetition. In inflammation of the fibrous tunics and internal parts of the eye, blood drawn from the back of the neck, has appeared to have a more decided effect, than when taken from the forehead or temple. The application of leeches to the parts in the immediate neighbourhood of the eye has been quite abandoned, on account of the irritation occasioned by their bites.

An instance of the mixed disease, called catarrho-rheumatic inflammation, occurred in the person of an old lady, who had been under the care of a physician, two or three months previously to her admission; she had an ulcer on each cornea, and was moreover afflicted with rheumatic pains in her limbs, &c. A solution of the nitrate of silver, with the acetic acid collyrium, was directed, and an antiphlogistic course, with Dover's powder at night, was pursued for a few days; but more benefit was thought to result from the following mixture, under the use of which the inflammation speedily disappeared; the ulcers filled up more gradually. ℞. Mixt. camph. ℥iij.; Liq. ammon. acetat. ℥j.; Spts. ether, nitros.; vin. colchici. aa. ℥ss. Dose, a table-spoonful three times a day.

My experience of the value of the solid nitrate of silver in ulcers of the cornea, accords with that of Mr. Lawrence; I have seen it manifestly injurious, when applied while any considerable degree of inflammation existed, and when this has been subdued by appropriate remedies, the ulcer has generally healed without difficulty; or when this has been more tardy than usual, it has been accelerated by touching it occasionally with a camel's hair pencil, dipped in a solution of the nitrate, of a strength varying from two to six grains.

The operation for cataract by absorption has been performed in several instances, and the patients are all in progress of recovery; the cases present nothing of particular interest; one of them a lad, aged twelve years, had congenital capsular cataract.

In the case of a young woman, whose vision had been destroyed by internal inflammation several years before, I performed the operation

for artificial pupil, according to Sir William Adams' method of dividing the iris. The left eye was entirely lost, the iris disorganized, adherent to the opaque capsule, and the retina probably injured; the iris of the other preserved its glossy appearance, but the pupil was greatly contracted, and adherent on every side to a mass of organized coagulable lymph; with this eye she could barely distinguish day from night. The iris was divided in two-thirds of its diameter, immediately above its superior pupillary margin; no separation took place except at the nasal extremity of the incision, where a small aperture was formed, admitting light sufficient to enable the patient to discern an object held close to the eye. After the lapse of a proper interval, the operation was repeated, and somewhat varied; the instrument was introduced behind the cornea as before, and through the pupil; two incisions including a triangular portion of the iris, were then made in the inferior and nasal side of that membrane; the apex terminating in the pupil. It was hoped that the insulated part would retract, and thus an opening be made; but in this expectation, we were again disappointed, for when the effused blood was absorbed, the divided edges were found to have kindly united, there being no separation whatever between them. The only advantage derived from this latter operation, was a slight enlargement of the aperture first made, and a corresponding increase of vision. No unpleasant consequences followed the operation; care being taken by bleeding, cupping, &c. &c. to prevent the accession of inflammation.

The knife of Sir William Adams, is not well adapted for this operation; I had one made for the purpose, somewhat narrower in its blade, and resembling a strait sharp-pointed bistoury.

It may be thought precipitate to condemn a proposition from the result of a single operation, but my opinion, never very favourable towards it, is certainly less so than formerly. From the facility with which the unsupported iris yields before the knife, its division is much more easily described than accomplished; and except perhaps some cases of *atresia anterior*, where it is fixed between two opposing points, little benefit seems likely to follow an incision if made.

ART. IX. *Statistical Account of the Cases of Urinary Calculi admitted into the Pennsylvania Hospital from May, 1756, to May, 1835.* By R. COATES, M. D.

YEAR.	Admitted.	Cured.	Relieved.	Died.	Removed by friends.	REMARKS.
1756	1	1	0	0	0	A female.
1763	2	1	0	0	0	1 infant remained till 1766.
1764	1	1	0	0	0	
1766	3	4	0	0	0	1 infant from 1763.
1783	1	1	0	0	0	
1786	1	1	0	0	0	
1789	1	0	0	0	0	Remained to next year.
1790	0	1	0	0	0	
1793	1	1	0	0	0	
1798	1	1	0	0	0	
1800	1	0	0	1	0	
1801	1	0	0	0	0	1 remained to next year.
1802	1	0	1	0	0	1 remained to next year.
1803	1	1	0	1	0	
1804	1	0	0	0	1	An out patient.
1805	1	1	0	0	0	
1810	3	1	0	1	0	1 remained to next year.
1811	1	2	0	0	0	
1812	2	2	0	0	0	
1813	2	1	0	0	1	
1814	3	2	0	1	0	
1815	1	1	0	0	0	
1816	2	2	0	0	0	
1817	1	1	0	0	0	
1818	2	2	0	0	0	
1819	3	2	1	0	0	
1820	2	2	0	0	0	
1824	3	2	0	1	0	
1825	1	0	0	0	0	Remained to next year.
1826	2	2	0	0	0	1 remained to next year.
1827	0	1	0	0	0	
1829	4	2	0	1	0	1 remained to next year.
1830	3	2	0	1	1	
1832	1	0	0	0	0	Removed, &c.
1833	4	2	0	1	1	1 remained, &c.
1834	3	2	1	0	0	1 remained, &c.
1835	0	1	0	0	0	
79 years.	61	46	3	8	4	

The mode of entering patients on the books of the Pennsylvania Hospital, is not such as to enable us to determine the ages of those who were the subjects of the above record. Nor is it possible to ar-

rive at positive conclusions with regard to several other interesting points. The first case, in 1756, was a female, and there may have been one or more females among the remaining cases, but this is rendered very improbable by the recollections of those who have been longest acquainted with the institution.

This fact can be determined only by a laborious search extended through nearly 40,000 separate entries, made during a period of seventy-five years. This examination shall be made, and the table corrected, if permission be granted; so that the profession may be put in possession of the most dependable information which the nature of the investigation will permit. In the mean time, the following calculations, founded upon the data just given, will be found to furnish very close approximations to truth.

The patients removed by their friends, are cases which are taken from the hospital against the wishes of their surgeon, and must therefore have been removed before operation, or before the completion of the cure of the incisions, the latter being a course of conduct extremely improbable in an institution regulated as is the Pennsylvania Hospital. This column contains, however, one entry of an out-door case of calculus, in the year 1804, who was removed at the request of the surgeon, the disease being incurable, and not admitting of an operation. It is therefore, proper, to exclude the entries on this column from our calculations of the results of lithotomy.

Of the deaths, one is known to have occurred from old age, and the exhaustion produced by the disease, without any attempt at operation, and must be also excluded. Others may have occurred in a similar manner, but as the fact cannot be ascertained, the possibility is waved.

Of the three marked as relieved, we may observe that there are no means of ascertaining whether they were ever subjected to an operation. It is most probable that they were not. If operated on, they may have experienced serious accidents, consequent on lithotomy, or they may have become subject to some other disease before their discharge; in either of which cases they would be entered on the books as relieved, only even though perfectly cured of calculus. Under this uncertainty, these three cases cannot be employed with safety in any calculation, but they tend to show the infrequence of serious consecutive accidents in this institution. The following, then, is the fairest possible approximation to the proportion of deaths from lithotomy in male subjects in the Pennsylvania Hospital, which can be deduced from the foregoing table.

Number of admissions from 1756 to 1835, 61.	
From which deduct—females - - - - -	1
Removed by friends - - - - - -	4
Relieved - - - - - - - -	3
Died without operation - - - - -	1
	9
Balance—male cases of lithotomy - - -	52
Of which died - - - - - - - -	7

Proportion of deaths to number of operations, as 1 to $7\frac{3}{7}$; prior to 1800 there were twelve cures, and no death; proportion since then, as 1 to $5\frac{5}{7}$.

Lithotrity has been but once attempted in this institution, and then with imperfect instruments. It was relinquished on account of the pain it occasioned, and the patient was cured by the lateral operation.

It is much to be regretted, that the mode of entry precludes the possibility of making tabular statements of the results of practice in the Pennsylvania Hospital, except in regard to lithotomy, and *perhaps* puerperal fever. The largest distinct mass of experience furnished by American medical institutions, is thus, in a great degree, lost to the profession and to the cause of humanity! This, in common with several other equally glaring defects of arrangement common to most, if not all the hospitals in the country, is part of our inheritance from the father-land, to which, in other respects, the divine art is so deeply indebted! It would be by no means difficult to correct these defects, and the interests of society call loudly for the remedy.

REVIEWS.

ART. X. *Memoir of the Life and Medical Opinions of John Armstrong, M. D.: to which is added, an Inquiry into the facts connected with those forms of Fever attributed to Malaria or Marsh Effluvium.* By FRANCIS BOOTT, M. D. Vol. II. London, 1834.

IN a notice which we gave, some time since, (Vol. XIII. p. 425,) of the first volume of this work, we took occasion to examine, somewhat at various length, points which came incidentally under review. The life of JOHN ARMSTRONG, particularly in its earlier period, was out of the ordinary train of scholastic or professional education. It was not strange therefore, that some of his opinions in reference to medical education and medical institutions, should have been at variance with the opinions of those to whom the guardianship of those systems of education and polity have long been entrusted. It seemed to us a suitable occasion to offer some remarks on those peculiar views. They are questions of great practical interest to us, no less than to the medical community of Great Britain. Our own institutions for professional education, and for the cultivation of professional character and attainments, are derived, with only partial alterations, from those of the mother country. Many of these alterations, we believe, indeed, to be great improvements; still the same great principles, in many particulars, run through the systems of both countries. And when they are attacked by a man of so much eminence and worth as Armstrong, it seemed worthy of the inquiry, to consider how far the systems themselves are justly amenable to his censure. The result to which we were brought, was, that so far as Armstrong had cause of complaint, the true cause was to be found rather in the administration of the system, than in that system itself; and that in the irritation of personal feelings he did not always perceive that the cause of the evils of which he complained, if it were not sometimes, in part at least, in himself, was to be found more in an unhappy management of ancient institutions, than in the unfitness of such institutions themselves, to accomplish their legitimate objects, in the protection of the great mass of society from the evils of unrestrained

quackery, and of the profession itself from the inroads of unworthy members.

If in this examination, we have spoken less favourably of Dr. Armstrong in some particulars, or have expressed less deference to his opinions on some points than the more zealous of his admirers would have wished, we have at the same time been not insensible to the many estimable traits of character which his life exhibited. Neither have we, as we trust, undervalued the contributions which he made to medical science, nor the improvements which, in some degree at least, he introduced into medical practice, although we were not prepared to subscribe to the correctness of all of his opinions, and still less to acknowledge the sufficiency of the evidence on which some of them rest. The deference paid to extended generalizations in medicine, is every day diminishing, and the conviction is constantly growing, that far more extensive and more accurate series of observations are necessary, before we can frame theories of disease that shall be entitled to much more of consideration, than as curious or ingenious speculations. Still farther were we from any design, or any willingness, to speak in disparagement of the work which was the occasion of our remarks, or of its amiable and able author. With a mind more logical, and disciplined by a much more systematic course of education and study, than belonged to, or were enjoyed by the master whose opinions Dr. Boott illustrates and enforces, he has brought to his task an extensiveness of research, and an ability of argument, which Armstrong himself could never have given to it. We are aware that this will sound to the ears of the author more like censure than commendation. For there is a fidelity and an earnestness of friendship in all that connects him with Armstrong, which leads him to throw in all his own powers of investigation and reasoning, to sustain the opinions and reputation of his friend. Yet we cannot but feel, and feeling it we see no reason why we should not say it, that he would have produced a better and more useful book, had his connexion with that distinguished man been somewhat less intimate, and his devotedness to his opinions less entire and absorbing.

As it is, it is a work of much interest and value. Although in our view, not a little trammelled by the desire to support the whole system of opinions derived from Armstrong, yet the "Inquiry into the facts connected with those forms of Fever attributed to Malaria or Marsh Effluvium," furnishes a history of febrile diseases, in connexion with the phenomena attending their origin and progress, abounding with information of the most important kind, and highly interesting in its character, even to those who are not convinced by the

evidence it presents, of the correctness of the views which the author entertains, in regard to their true cause.

We have before expressed an opinion of the excellence of this Inquiry, in regard to the fevers of our own country, in the first volume of this work. But the discussion of the preceding topics had so extended our remarks, that we did not speak of this part so fully perhaps, as its value and importance, especially to physicians in this country, deserved. We are not disposed to go into a very detailed examination of it at this time. Yet some notice of it seems necessary, to prepare the way for a satisfactory comparison of the fevers of America with those of Europe, which are the peculiar subject of this second volume.

Before entering upon his general survey of the fevers of this country, Dr. Boott goes into an examination of the question of the identity of yellow fever with the bilious remittent, acknowledged to be indigenous; in which he shows how little foundation there is for the opinion of Chisholm, that a distinct disease, the much talked of *Bulam Fever*, was imported and confounded with it. This examination, able and, to our minds, perfectly conclusive as it is, was scarcely necessary to convince the physicians of this country. We believe few remain, who have any doubts on the subject. For us, as we have before remarked, it is chiefly interesting, as a faithful and judicious summary of the facts and arguments which have long since settled the question. In this point of view this essay possesses great interest; for we hardly know where else can be found so condensed and at the same time so complete an examination of the whole subject.

To British physicians, however, the subject is still of a higher and more practical importance; since to them, at least to a great portion of them, as represented by their medical writers, the doctrine of contagion is a stumbling block, which they seem to have no power to get over. To them, if we might hope that our recommendation would reach them, we would recommend a careful perusal of this chapter; and if their minds are not hopelessly bewildered by the confusion into which the greater part of their writers have fallen, about contagion and infection, they will find a clearness and abundance of evidence which will forever settle the question with them also.

So lately as April, 1835, (such is the date of the publication,) an author, no less distinguished than James Copland, author of the Dictionary of Practical Medicine, makes use of such language as this: "The non-infectionists insist upon four things; the truth of which they *take for granted*, and make the bases of their arguments

in proof of their doctrine. The first, is the passage of fever into plague, and of remittents into yellow fever."—Dict. of Pract. Med. p. 776. The other *three things* are not particularly connected with our present topic, and we pass them without notice. But those who are familiar with the fact and the proof of it, that remittent fever not merely passes into yellow fever, but that the latter is no more than an aggravated form of the former, may be surprised to learn that all this is only "*taken for granted!*" They may perhaps account for the assertion by the supposition, that not only all American papers on the subject, but also the works of such British writers as Bancroft and Boott, are ranked by the author of it among "inferior publications," and as such not only, as his prospectus tells us "excluded from his Bibliography," but also from his reading. Neither of these works are noticed in the Bibliography to the article "Epidemics," nor in that of "General Fever," though both of them, and especially that of Dr. Boott, are peculiarly appropriate to the former, and by no means inappropriate to the latter. As the article "Remittent Fever" is not completed, it does not yet appear whether they may not receive some notice under that title.

The survey of the fevers of the United States begins with the fevers of the southern states, then passes in review those of the middle states, and concludes with those of New England. It every where exhibits a great degree of industry and research in seeking out the best sources of correct information, and of ability in selecting and condensing them into a uniform and consistent and instructing history. This history, is chiefly a history of the epidemic fevers of the North American States; for the obvious reason, that it is only of the epidemics that any materials exist, sufficient for the construction of any thing like a connected history. Few physicians take sufficient notice of the diseases of their ordinary every-day practice, to record and preserve, still less to publish, an account of them. We have indeed a few exceptions to this remark, and the publications which constitute them are among the most valuable parts of our medical literature. But, in general, our published accounts of diseases refer only to those extraordinary periods when diseases have prevailed to such an extent as to assume more or less of an epidemic character.

It need not be supposed, however, that this circumstance materially affects the correctness of the history, in reference to the more ordinary diseases of the country. So far as the nature of its diseases is concerned, a history of its epidemics is probably a true history of all its diseases. That concentration of the cause of a disease which converts it from a sporadic into an epidemic, may also operate in the

individual cases to render them more severe; but it is not likely to change their character, so as to give rise to essentially a different disease.

The first epidemic noticed by Dr. B. in this survey, prevailed at Waynesborough, in the interior of Georgia, in 1802. It was a remittent fever, in some cases, entirely intermitting. As Dr. WHITE, from whose paper in the New York Medical Repository the account is taken, says of it, "It may be called a simple remittent; a bilious remittent; a malignant bilious, or a yellow fever. They are only different grades of the same disease, arising from the difference of constitution, and diversity in the nature of the predisposing and exciting causes. I do not hesitate to declare I have seen since my settlement here, many well-marked cases of yellow fever, though the yellowness was not always an attendant symptom. At the distance of a hundred miles from the nearest sea-port, it is farcical to look for foreign sources of infection."—Vol. I. p. 307. Is this to *take for granted* the "passage of remittents into yellow fever?"

This account is followed by a notice of a similar epidemic in Augusta, Georgia, in the summer and autumn of 1804; then by a short notice of diseases in the British army near New Orleans, in 1814 and 1815, and in the American army in the same neighbourhood in 1809. For the purpose of exhibiting other examples of disease of acknowledged endemic origin, the author next presents us, though somewhat inaccurately, in reference to his geographical division, with accounts of epidemics at several places on the Ohio River, in 1796, 1797 and 1800, and several later years. The same purpose is pursued by giving an account of a fever on the Roanoke River in 1792, and at Greenville, on the Tar River, in 1800, both in the interior of North Carolina.

"In these observations of fever," he remarks, after quoting in some detail the histories of the several authors, "as it occurs in the interior of North Carolina, we find intermittents and remittents prevailing in the usual seasons, seldom fatal to the natives of the country, but more formidable to strangers,—typhus attacking the former in dry seasons, spring, or summer, sometimes epidemic, and referred distinctly by Dr. Pitt, to a concentrated marsh effluvium; and in the winter and spring, a continued fever, certainly of a specific kind, according to Dr. Williamson's observations, attacking those who have been afflicted with intermittents, and prevailing within certain limits, chiefly, perhaps only, in those places where people are subject to intermittents, in low sunken grounds and along the sides of rivers." Vol. I. p. 348.

He next turns to the sea-coast, and gives us from Dr. DE ROSSET, an account of yellow fever at Wilmington, North Carolina, and from Dr. NORCOM, at Edenton in the same state; and much more at

length from Dr. Ramsay and Dr. Johnson, of the same disease, in different years, in Charleston, South Carolina. This is followed by a history of the same epidemic at Norfolk, Virginia; and at Alexandria and Georgetown, in the District of Columbia. At the same time that this disease prevailed in these two latter places, 1814, a similar epidemic raged at Winchester, Virginia, and Fredericktown, in Maryland, and many other places in the interior of that state, as well as of Virginia and Pennsylvania. This epidemic is compared with that of the sea-board, and the conclusion is irresistible, not in the mind of Dr. Boott merely, but with the authors of the several accounts, the actual observers of the disease as it prevailed under their care, that it was substantially the same disease with the yellow fever, as it prevailed in the cities on the coast.

The chapter on the fevers of the "Middle States of North America," is made up chiefly with accounts of the yellow fever at Philadelphia, in 1793, 1798, and 1802. These epidemics are too well known to all our readers, who have given any attention to the subject, especially that of 1793, by Dr. Rush's most interesting history of it, to render it necessary for us to notice them in detail. With these, Dr. B. compares the yellow fever of Wilmington, Delaware, in 1798; and an intermittent and bilious remittent fever which prevailed extensively in 1804, in the interior of Pennsylvania, and several other of the middle and southern states. This last epidemic does not appear to have risen to the grade of yellow fever, but to have exhibited many of the same general characteristics, only in a milder form.

One circumstance is to be especially noticed here, in reference to our author's views of the cause and character of fever. In the more southern states, it had already been observed, the fevers in the summer and autumnal months, uniformly assume the intermitting or remitting form; and it is only during the winter months that those of a continued type are ever found. In the middle states, continued fever is found in some sporadic cases, even during the summer and autumn, in those years in which no extensive epidemic prevails. As we advance farther north, the prevalence of continued fever increases, and that of the periodical types declines, until in New England the latter appear only at rare intervals, in years of an extraordinary high temperature, by which the climate is for the time assimilated to that of more southern states. The development of this fact, going to show the identity of the cause of typhus fever, with that of intermittent and remittent fevers, is the leading object of the whole history. There is a remarkable confirmation of this view of the subject, in an occurrence, given on the authority of Dr. Rush, which took place in

Philadelphia in 1801. A number of emigrant families arrived at Philadelphia in August, from Ireland and Wales, and brought with them the ship, or typhus, fever. They were carefully attended at the Lazaretto and the City Hospital, and the disease did not spread. "Contrary to its usual character," says Dr. Rush, "it partook of the remissions of the bilious fever, probably from the influence of the season upon it." We must give Dr. B.'s remarks on this occurrence entire.

"The fact of the ship fever, or typhus of Great Britain, changing in the month of August, at Philadelphia, to a remittent fever, is too curious and interesting to be passed over in silence. Two explanations of this change of type may be offered."

"1. That the fever originating in Ireland, Wales, or on ship-board, from contagion, according to the commonly received opinion of the source of typhus, remained as such so long as no other remote cause of disease existed; but that, on the arrival of the patients in Philadelphia, they became exposed to the operation of malaria, which gave rise to a new type of fever, viz. the remittent."

"2. That the typhus, originally a disease of malaria, changed, on landing, from a continued to a remittent type, from the influence of climate, and of those circumstances which contributed to improve the condition of the sick, and consequently to restore them gradually to health."

"The idea of two distinct causes, *viz.* a specific contagion and marsh effluvium, uniting to produce a compound fever, has been entertained by Pringle and other authors; and it arose from the circumstance of fevers occasionally exhibiting the characters of typhus and marsh fevers,—beginning as the former, and ending as the latter, or the reverse; and from the belief that neither of the causes alone could give rise to the conjoined symptoms."

"If it can be shown, that in situations obnoxious to malaria, and where no source of typhus contagion exists, or can be reasonably suspected to exist, a fever appears, exhibiting the intermittent, the remittent, and the continued or typhoid character, and that the milder form passes into the more severe, or the severe into the milder, it is almost a necessary inference, that these types are effects of malaria, and consequently, no great surprise would be felt at the fact of typhus changing into a milder form of fever, from the sudden influence of such favourable circumstances as patients labouring under it on ship-board experience, when they are landed in a genial season, placed in clean and airy apartments, their wants and comforts zealously attended to, and their minds cheered by the termination of the voyage, &c. It is well-known that continued fevers have a certain duration; and that when once formed they must, under the same circumstances of situation, go through a regular rise, progress, and decline; and we could not, therefore, expect an immediate termination to the ship fever on its arrival in Philadelphia. But though it did not cease, it put on a milder character, or at least it remitted, so that the chain of febrile action was broken; and Rush admits that no proofs of contagion were manifested."

"I have already shown that typhus has appeared in different places in America, where malaria abounds, and where the periodical types of fever are the usual consequences; and I would especially refer to the epidemic at Wilming-

ton, and to the consideration of those slow nervous or chronic states of fever, which Rush frequently mentions as arising out of the yellow fever, or coëxisting with it. These I consider as very analagous to, if not identical with, the typhus of Great Britain; and if these indigenous fevers of America sometimes arise out of, or pass into, a periodical type, I see nothing anomalous in a similar fever imported from Ireland or Wales exhibiting a change from a continued to a remittent fever." Vol. I. pp. 490—492.

We might easily object to some of the views here presented, but we prefer to pass our objections by, and go on with the survey of American fevers. The fevers of the city and state of New York, furnish many favourable opportunities for a satisfactory investigation of the question as to their origin, of which our author has availed himself, with his usual ability. But for the reasons already given, in regard to those of Philadelphia, we need not follow him in his detailed examination of them. Most of our readers are too familiar with the subject, to require it of us; and those who would examine it anew, we refer to the work itself. We cannot, however, refrain from presenting the testimony of Dr. COVENTRY, which is referred to in this chapter, though quoted in another part of the work, as a specimen of the manner in which the "passage of remittent fever into yellow fever," *is* "*taken for granted.*"

"After my removal," says Dr. C. "to the flat country, called the Lake Country, I met with fevers, in which I often recognised the black vomit and intense yellowness described in the yellow fever. Acquainted with the diseases prevailing in the cities only through the medium of their newspapers, I had conceived the disorder raging there as one of a very different type, and resembling what I conceived to be the plague of the Levant, more than the epidemic that was so generally spread over the western district of the state of New York, and with which I had become so well acquainted, having in my own family, and subsequently myself, undergone the disease. But a visit to New York, in the autumn of 1805, undeceived me; for in that part of the city near the wharves, and bordering on the East River, I recognised on the first glance, the cast of countenance with which I had been but too familiar since the 20th of July preceding. It happened also that the most intimate friend I had in the city, resided in a low situation called Pearl street, and had remained there during the season. He had the yellow fever himself; also three of his family, two of whom were victims. It was conceded by the gentleman who attended this family, that these were genuine cases of yellow fever. I noted, from the reports of my friend, confirmed by the testimony of his physician, the symptoms; and found every one correspond with those of many patients who had fallen under my care, none of whom had been near the sea-coast, and most had never seen any thing larger than a canoe or small boat in their lives. After the most close attention, I was as fully convinced of the identity of this disease with the epidemic that had ranged along the margin of the western lakes, as I was of my own existence." Vol. I. p. 279.

The eastern states furnish but a few examples of the prevalence of yellow fever as an epidemic. In 1798, it prevailed to a considerable extent in New London, Connecticut; and in the same year, and also at two or three other periods in Boston, Massachusetts; and to a smaller extent in a few other places. Other forms of fever, however, have prevailed to a greater or less degree throughout New England. The history of these, so far as he could find materials for it, Dr. Boott has collected and compared. In this way, besides the accounts of the epidemics of yellow fever, already referred to, he passes in review, the diseases of Rhode Island, as recorded by Dr. WHEATON, those of Vermont by Dr. GALLUP, those of the northern army during the war of 1812, and many others. The general result of the whole investigation into the origin of the fevers of America is thus stated:—

"In taking, therefore, a general review of the diseases of North America, which owe their origin to malaria, we observe yellow fever almost annually epidemic at Vera Cruz, lat. 19° 11′; and that it gradually disappears in frequency as we approach the latitude of Boston, 42° 20′; that in the parallel of Philadelphia it often ends in typhus; that north of this line, typhus becomes the more frequent form of fever, till we lose all trace of yellow fever in Vermont, as a distinct disease, the symptoms of both, however, being sometimes blended in the same case; that both of them are attended, from the south to the north, with diarrhœa, dysentery, *cholera infantum* in the summer, and in the winter and spring with a pleurisy or peripneumony, which in the south is more decidedly marked, like the autumnal fever, with bilious symptoms; sometimes, as Rush observed in 1803, with a tendency to a tertian type; and in the north, having, like its fevers, a more typhoid character, sometimes approaching to the most malignant forms of congestive fever. It is highly interesting to observe, that when typhus occurs in those parallels of latitude obnoxious to yellow fever, it is towards the decline of that disease, as the cold weather sets in. In the north it occurs at the same season as yellow fever does at the south, though later generally, at least as an epidemic. Dr. Gallup says its greatest prevalence in Vermont is from July to September; but that it extends into the early part of winter, and sometimes till spring. This analogy with the typhus of Great Britain is important. It has been too confidently asserted, that the typhus of this country is confined to winter."

"Of the causes which aggravate the fevers of cities, I think no impartial person can doubt, from the general contrast afforded, in this inquiry, between the epidemics of the sea-coast and those of the interior.

"The confined limits of the disease; its prevalence in low alluvial districts; the striking origin of the epidemic at New London; the coïncidence of cause and effect in Boston and New York; the occurrence of fever on ship-board, under circumstances like those described by Dr. Burnett—all point to local causes of contaminated air; and this will explain the prevalence of fever in the close, crowded, and filthy part of the towns and cities of this country.

"That yellow fever cannot be considered a contagious disease, is proved beyond all question. It is not communicable by the sick, in domestic life or in

hospitals. The matter of black vomit has been swallowed, and applied to the body in a variety of ways, without any effect. We have seen that the typhus of New York and Boston, was as incommunicable there as yellow fever; and Dr. Gallup's experience in Vermont was uniformly against any thing like a contagious character." Vol. I. pp. 614—616.

Our readers will now be prepared to follow our author over a similar survey of the prominent febrile diseases of Europe. Here the range of country is much less extensive than that which we have gone over, and the influences upon disease, to be expected from differences of climate, are much less. But the length of time which the history embraces is much more extended, and the variations in the condition of the inhabitants in respect to the comforts of life, and to exposure to disease, are vastly greater; and hence we are not to be surprised if the forms and appearances of fever should prove to be more diversified, even although they should still be found to proceed from a common origin.

The most formidable of the early diseases of Europe is the plague; and with this Dr. B. begins his second volume. His purpose is thus stated.

"I shall examine some of the facts connected with plague, and see how far it can reasonably be considered a marsh fever. By this term I mean intermittent, remittent, continued, or mixed form of fever, arising from malaria, or, contaminations of air, aggravated in their effects by atmospherical influences, and considered under all its modifications as essentially one disease, variable in character, especially in different seasons, climates, and situations; desultory in the locality of its prevalence, generally obedient to particular seasons, its worst forms, arising more or less gradually out of the milder, or passing into them; generally attended with something unusual in the character of the year of its greatest virulence; and falling most severely on the lower classes of society, whose situation, habits and circumstances, favour its early development and diffusion among them." Vol. II. p. 9.

He first speaks of the plague of London of 1665. It may be asked what means we have of ascertaining the character and origin of that disease, other than the declarations of those who witnessed and have described it? It is apparent that Sydenham and his contemporaries who have written the history of the plague of 1665, regarded it as an imported disease, and believed that it owed its destructive ravages in a great degree to its contagious character. The question is asked, somewhat contemptuously, by Copland, "did the writers who lived subsequently know more of the matter than Sydenham and others, who saw the commencement of that plague, as well as its decline?"*

* Dictionary of Practical Medicine, p. 775.

The answer is easy. We do not rely upon any ancient author, nor indeed upon any author, for the peculiar opinions he may have expressed, but for the facts and arguments upon which those opinions are grounded, or rather for information on which to found our own. A peculiar bias of mind, or the prevailing notions of the day, may have influenced an author's speculations, and given a character to his opinions, which the facts he relates do not support. A subsequent writer therefore, having the advantage of the accumulated observations of later times in regard to kindred diseases, as well as the opportunity of comparing those of contemporaneous authors, may draw his inferences from the facts they have detailed, with a hope of coming to a right result in respect to its origin, better even than could well have been indulged by those who saw so much of its ravages. Especially may such a result be anticipated from a careful comparison of the history of its rise and progress with that of other diseases of acknowledged character and origin, which immediately preceded, and accompanied, and followed it. This is precisely what Dr. Boott has done with the London plague of 1665.

Intermittent and remittent fevers had prevailed in London for many years previous to 1665; and these were of so severe a character that the number of deaths ascribed to ague and fever, in the bills of mortality, from 1659 to 1664, amounted to from 2,107 to 3,490 in a year; and in the fatal 1665, the number attributed to this cause is 5,257. It was about the middle of this year, 1665, that the true plague began, or at least that it was recognised as such. It was at its height in September, continued in some degree through the winter, and disappeared the following spring. The number of deaths reported in the bills of mortality was in 1665, 68,596, and in 1666, 1,998.

In the spring of 1665, a few months before the plague made its appearance, *as plague*, an epidemic fever prevailed extensively, which Sydenham regards as of a different character from the fevers of several previous years, belonging to a different "constitution." It was a violent disease, and often fatal; and partook so much of the character of true plague as to be often called by Sydenham, the *pestilential fever*. "Whether it deserves to be entitled *a plague*," says Sydenham, "I dare not positively affirm; but this I know by experience, that all who were then seized with the true plague, attended with all its peculiar concomitants, and for some time afterwards, in my neighbourhood, had the same train of symptoms, both in the beginning and through the course of the disease." In his directions for the treatment, he classes this pestilential fever with plague, and re-

commends the same treatment for both. This is sometimes spoken of as "the malignant fever," and sometimes as the "spotted fever." It appears to have been recognised by this last name in the bills of mortality. In the tables of these bills, furnished by Dr. B., we find 1,998 deaths recorded by spotted fever in 1665. And from these tables it would seem not to have been regarded as a new disease in that year. A considerable number of deaths by it appear in the bills for a long series of years both before and after that time.

It will at once be seen, that the true character of this pestilential, or spotted fever, standing as it does in so close a relation to the acknowledged plague, is of great importance in ascertaining that of the plague itself. The descriptions of Sydenham and others, are not very full in regard to it. Yet it does not appear that he looked upon it as very different from the fevers which had preceded it, and he gives no intimation of any suspicion of a foreign origin; while the plague, according to Hodges, was imported in bales of merchandize from Holland. Dr. Boott regards this fever as substantially the same disease as the plague itself, differing from it only in the degree of violence with which its symptoms were manifested: in the same manner as yellow fever is a more aggravated form of the common bilious remittent, and like that, arising from a greater concentration of the same cause. This view of the matter is supported in a very able, not to say conclusive manner, by a history of the progress of the two forms of disease.

One of the ablest and most zealous of the advocates of the doctrine of contagion, Dr. Copland, has recently advanced a similar opinion in regard to the identity of this fever with plague; and it is not a little curious to see two men referring so confidently to the same circumstance for the support of conclusions so entirely opposite. "Upon a careful examination of Sydenham, Baynard, Hodges, De Foe, &c." says Dr. Copland, "it is manifest that the malignant spotted fever, said to have been prevalent at the commencement and deline of the plague, was actually this distemper, reported as this fever for the purposes of concealing its existence; and that where this fever actually existed, it was one of those forms that plague very commonly assumes, especially during low ranges of temperature, as at that season."*

We might here retort upon Dr. Copland his own question, whether "subsequent writers know more of the plague than Sydenham and others;" especially as this point refers to the character of the disease

* Dictionary of Practical Medicine, p. 776.

which was the subject of immediate observation, and not like the other question, to a matter of general inquiry. But we are too well pleased with the opinion itself to quarrel with the author of it, about the inconsistency of his opinions. We may ask, however, if this spotted fever were the true plague, what becomes of the importation of plague from Holland, in the summer of 1665? And if plague were called spotted fever merely for the purposes of concealment, why was the latter designation continued, after the former had become recognised and acknowledged? Still more confidently may we ask, what becomes of the contagion of plague, since this form of it continued to prevail in London every year from 1647 to 1728, and to occasion a considerable number of deaths each year? Indeed this question may be asked with great force, in regard to acknowledged plague. That disease had existed in London, and been distinctly recognised as such in the bills of mortality, nearly every year for almost a hundred years. Yet it had prevailed extensively as an epidemic only in a few years, generally at distant intervals; and it never appeared as such after 1666, although it prevailed extensively in some parts of England, for several years later. If so contagious, why should it have ceased so suddenly? Not, Hodges tells us, for the want of subjects. Nor was it for want of free communication between the well and the sick. For we are told, that although the alarm was great at first, it speedily subsided, and there was afterwards great fearlessness in respect to intercourse between them.

The truth appears to be, that the two forms of disease were indeed essentially the same in character; and that a distinction was made between them, not as Copland supposes, for the corrupt purpose of deception, but because the minds of the several authors who described it were so impressed with the notion of the necessity of contagion to make up the character of true plague, that they were unwilling to give the name to a disease so obviously indigenous, and to which no appearance of contagion attached itself. How often have we seen the same sort of distinction attempted in our own day, in regard to yellow fever, with scarcely any pretence of any difference of character as exhibited by the phenomena of the disease, and resting exclusively upon a supposed difference of origin.

The conclusion to which our author arrives in this part of his subject, may be seen from the following extracts:—

"Since 1670, the decrease of fever," in London, as shown in detail by a table, which we have not room to copy, "has been progressive from 3,423 to 932 annually, a mortality very inconsiderable, considering the amount and the quality of the population. Bowel complaints," as appears from the same table,

"have steadily decreased since 1670, and the disproportion in modern times, 20 to 2,966, is certainly a most remarkable fact. Heberden justly insists upon this as an evidence of an endemic cause of disease during the seventeenth century, when plague was almost annually present in London from 1603 to 1679. I had intended to have offered his cogent reasoning on this subject, but I shall content myself with referring to his valuable paper.* It is singular to observe the state of his mind and that of Hancock, after their investigation into the probable origin and progress of fever, and to contrast their evident doubts and cautious inferences with the dogmatical assertions of those who take no trouble to inquire into the subject. It is very evident that both these excellent men more than doubted of the introduction of any foreign contagion as the cause of plague; which even if admitted to be possible, on the shallow evidence that is brought in its support, cannot account for the previous existence and the simultaneous increase of other diseases, to say nothing of the absence of any new importation since 1679, notwithstanding the notorious frequency of plague in the East, and the constant and increased communication with it, especially of late years, since cotton has become an article of import from Egypt. If quarantines have saved us, how comes it that plague has never appeared in those establishments? And if contagion could act as the cause of an epidemic, why was not the tragedy of 1593, 1603, 1625, 1636, and 1665, acted over and over again, especially in years when there died in London from 600 to 4,240 of plague?" Vol. II. pp. 78, 79.

"That plague in those years in which the mortality was trifling, was but the peculiar aggravation of the ordinary fever of London, is, I think, apparent from the limited amount of the disease. In speaking of the pernicious fevers of Italy, as described by Torti, I have remarked, that the peculiar cases of aggravation which are met with in any one epidemic, are sometimes found to predominate in particular epidemics; and plague is a proof of the fact, for, like the occasional examples of yellow fever, of dysentery, and choleric fever, scattered in sporadic cases through epidemics generally of a common remittent character, we find equally sporadic cases of plague in the epidemics of the fevers in this country; and occasionally these diseases at other times predominate over all other forms, and the other fevers are then the exceptions to the prevalent yellow fever, dysentery, cholera, or plague. Upon what this depends it is impossible to surmise; though I see no difficulty in conceiving, that if the ordinary causes of fever can produce scattered examples of yellow fever in plague in some years, they may produce them generally in others, without the necessity of resorting to the forced supposition of an imported contagion. This, I think, must be abandoned with respect to yellow fever and typhus; and I cannot see how, consistently, it can be maintained with respect to plague, nor can I imagine that the doctrine of a contagion, *sui generis*, is applicable to either of the diseases." Vol. II. pp. 80, 81.

Dr. Boott next proceeds to speak of plague, as it has been described by different authors, "tracing it from south to north, with a

* "Observations on the Increase and Decrease of different Diseases, by W. Heberden, Jr., M. D. London 1801."

view to observe whether temperature has any modifying effect upon it, analogous to what we observe in marsh fever." Assalini, who accompanied the French army into Syria in 1799, describes what he calls "an epidemic fever," which attacked the troops engaged in that expedition. He seems to have given it that term, for the same reason that we have before noticed in regard to others. Having imbibed the notion, that the plague is necessarily a contagious disease, he was unwilling to give the term to a disease which obviously did not possess that property; although he says, that from the havoc it caused, it was called the plague. From his description of the disease too, it is impossible to distinguish it from plague as described by others. The severe cases were accompanied by buboes and carbuncles, although these were sometimes wanting. But this is no more than what has happened in other epidemics of plague. As Dr. B. justly remarks, it may be seen from the facts that he states of plague, that, "it is a disease which owes its fatality to the symptoms common in other modifications of fever; and that abstract those conditions dependent on fever, and consider it merely as an eruptive disease, and its formidable character disappears."

Assalini's description of the symptoms of this fever is not very particular, and it does not appear whether it remitted, or was strictly continual. But the plague of Aleppo in Syria, of 1742 to 1744, as described by Dr. Russell, was preceded and accompanied, and followed by a fever, analogous it would seem, to the spotted fever of London, which often was a true intermittent. It is curious to see in the mind of Dr. Russell, the same bewildered distinction between this fever and plague, which we have before repeatedly noticed, founded upon the assumption of the necessity of contagion to the character of plague. Yet the different forms of the disease were so blended together, as to render it impossible to distinguish them by the symptoms. For example, in 1743, "autumnal intermittents became frequent about the beginning of August, got to their height in September, then gradually decreased, and disappeared at the close of the year." These fevers at the beginning, often assumed for a few days a continued form, with violent and irregular symptoms, *not unlike those of the plague;* but after bleeding and purging, they reassumed their genuine forms of tertians, double tertians, and quotidians, and were cured by bark. The next year, intermittents existed from the middle of March to the beginning of May. "In June, July, August, and a part of September, *a malignant fever prevailed, attended with much the same symptoms as the plague,* buboes and carbuncles excepted." "The cure was much the same as in the

plague, only that the sick bore a second bleeding better." From June to December, autumnal intermittents were very frequent. They did not, like those of the preceding year, begin with the appearance of a continued fever; but unless they were earlier cured by bark, they were apt after the seventh day to intermit no more, but to run out under a continual form to the fourteenth or twenty-first day, unless fatal at an earlier period.

Another strong analogy between the epidemics, of which the plague forms a part, and the fevers of America of acknowledged indigenous origin, on which Dr. B. insists with much force of argument, is found in the similar character of the diseases which prevail during the colder portions of the epidemic periods. He had before shown, although in the conciseness of our analysis we may not have noticed it with sufficient prominence, that during the autumn and winter and spring of those years in which yellow fever was epidemic, diarrhœas and dysentery and peripneumony were unusually prevalent. The same was true at the time of the plague in London, particularly in the memorable winter of 1665–6. And we find the same diseases mentioned among the spring epidemics of Syria.

To contrast the plague of Egypt and Syria with the same disease in a more northern latitude, Dr. B. quotes that of Nimiguen in 1636, described by Diembroeck, in which the fever was generally of a continued type. We need not, however, follow him in this examination, as we have done in those which preceded it. Our readers will, by this time, have seen with what ability and industry, and we think we may add fairness, he has investigated the different epidemics under examination. In one particular, however, they will do him great injustice, if without any qualification they were to found their opinion of his work upon the analysis of it which we have presented. Our extracts and remarks have had chief reference to the topic, which may be considered indeed as the leading subject of the work—the origin and cause of fever. It would have led us too far, and extended this article much beyond its proper limits, to have noticed at the same time the rich information with which these volumes abound, in regard to the particular character of the diseases which they describe, and the phenomena exhibited by them. In this point of view, a high value and interest must attach to the work, independently of its influence upon the long agitated question of the contagion of diseases.

Dr. B.'s notice of the celebrated plague of Marseilles of 1720, which has been so much relied on in proof of the contagious character of the disease, is brief, but is marked by his usual research and

ability. The result to which he arrives, may be seen from the following extract.

After an examination of the circumstances which were said to accompany the introduction of the disease, as related by different authors, he says—

"The inference that the plague was not owing to contagion, is supported, 1st, by the fact, that cases probably occurred in 1719, but certainly in April and May, 1720, before the ship arrived from Syria, which was accused of bringing the contagion; 2d, by no disease having been communicated, to all appearance at least, at Leghorn, where she touched on her passage to Marseilles, and where three of her crew died; and 3d, by the plague itself, in many cases, not differing from the usual endemic fevers of the south of France, excepting in the frequent, but *not invariable* occurrence of the bubo or carbuncle." Vol. II. p. 246.

Our author next turns to the ordinary forms of fever, tracing them in the works of some of the more distinguished medical authorities, from Italy and the coast of the Mediterranean, through Paris to Great Britain.

"It will be found," he says, "that the periodical type is almost universal in the south, and that the continued is the representation of the same disease in the north; that if the last ever distinctly occurs in Italy, or the first in Britain, they are *exceptions to a general rule.*"

He first gives a sketch of the fevers of Italy, from the works of Torti and Lancisi; and then an account of the petechial fevers of the same country, from Fracastorius, Sarcone and Acerbi.

"The work of Torti," he remarks, "is especially valuable for the minute details of the protean forms of marsh fever, though his observations were made in too southern a latitude, viz. at Modena, lat. 44° 34′, for the unmixed form of continued fever, as it occurs generally in Britain, to have been presented to his view. He considered that all the varieties, from the mild to the most malignant intermittents, and from these, with distinct intermissions, to the continued form of fever, were modifications of one disease; and he fully verifies the accuracy of Dr. Armstrong's observation, that the types of fever pass and repass into each other; that inflammation, as an internal condition, forms, to all appearance, no part of the intermittent type, and that its supervention is one of the circumstances which gives rise to the continued form. He also shows, what I have endeavoured to exemplify in the sketch of the fevers of America, that temperature has a marked influence on the type of fevers, their tendency to the continued form increasing as the cold of autumn deepens into winter." Vol. II. p. 250, 251.

Of the petechial fevers of Italy, he says—

"It is evident, that the modern Italians consider it identical with the typhus of Britain, and perhaps uniformly ascribe its origin and diffusion to contagion. I refer those who are curious as to the history of the disease, to the second

chapter of Acerbi's work.* I shall content myself with offering proof, that in Italy it is the aggravation of marsh fever, and distinctly arising out of the periodical type; a mode of development which harmonizes with what I have advanced of the influence of high temperature, and with the agency of malaria." Vol. II. p. 329.

To give in detail the several facts and arguments by which the author illustrates and supports these several positions, would demand much more copious extracts from his work than our limits will permit; we must content ourselves therefore with having presented his own conclusions, and refer our readers to the work for the proofs by which he sustains them. We have already exhibited too much evidence of his elaborate research and sound reasoning for them to doubt that he has powerful, if not satisfactory and conclusive grounds for his positions. With the same remark, we must pass over the sketch of the fevers of Malta and the Ionian Islands, taken chiefly from Hennen's Medical Topography of the Mediterranean, and that of the Fevers of Minorca from Cleghorn. An examination of them, that should be of any avail, would require more of details than we have left ourselves room for.

Indeed, we must extend the remark still further to our author's examination of the typhus of Paris and of that of Great Britain. It does not admit of condensation, so as to be presented in the form of an abstract, without entirely destroying its value. We could wish to present to our readers his analysis of Louis' observations and researches in regard to the pathology of typhus; but we cannot enter upon it at the close of so long an article. We are not without the hope of returning to this part of the subject at some future time, especially if we shall find the means of comparing the observations of that great man with the results of similar researches in regard to the character of that disease in other places.

We cannot conclude without repeating the remark, that our readers will greatly mistake, if they should infer from our notice of this work, that it is limited to the establishment of a particular hypothesis. It is truly a general history of febrile epidemics, abounding in information of the most valuable kind, and narrated in a harmonious and pleasing style. We are well aware, that a history designed to illustrate opinions previously adopted, is liable to be drawn aside into partial views of the subjects of which it treats. But we have in the history before us, constant marks of candour and fairness, sufficient to set our minds at rest, in respect to any intention of mislead-

* "Dottrina del Morbo Petechiale. F. E Acerbi. Milano, 1822. pp. 132."

ing us; and if we suppose our author to be sometimes insensibly influenced as to the weight of his authorities, by his preconceived opinions, the abundance of the details which he presents us, affords a ready corrective to the supposed partiality. Independently of the peculiar views which these volumes are designed to support, they have brought together a great mass of information of inestimable value, which it would be quite impossible to find elsewhere, except indeed by the same laborious process as that to which the author has himself resorted. E. H.

ART. XI. *Rapport et Discussions à l'Académie Royale de Médecine sur la Taille et la Lithotritie, suivis de Lettres sur le même subject.* Par MM. DELMAS, SOUBERBIELLE, ROUCHOUX, CIVIALE, VELPEAU. 8mo. Paris, 1835. pp. 194.

IN the last number of this journal we offered some remarks on the work of M. BLANDIN, entitled *Parallele entre la Taille et la Lithotritie*, and we ventured to intimate, that with all its avowed candour, the author was evidently somewhat of a partisan. Nothing could tend to show the powerful, we might almost say violent party spirit at present prevailing in Paris, between the defenders of the two modes of operating to which we have alluded, than the debate in the academy, on the report of M. Velpeau.

Four long sessions were occupied in discussing, we know not precisely what—for the question at issue is nowhere defined with clearness. The debate winds up with "conclusions in which nothing is concluded"—for the report was finally adopted amid "incredible tumult," and numerous protests against the manner of voting; M. LISFRANC demanding that the question should be put again at the succeeding session. There was much sharpness of retort and some little personality displayed in the debate, and among other after results, we may notice a warm discussion between MM. Velpeau and Civiale, of which we discover, as yet, but the *beginning of the end.* The damps of three thousand miles of ocean have a wonderful effect in cooling the warmth of an argument, and we shall endeavour to extract some few facts and conclusions from the several sources above enumerated, in order to illustrate the opinions at present entertained in France on the value of lithotripsy.

The memoir of M. LEROI contains the history of five cases in which the operation of lithotripsy was performed by him on children

at a very early age. The abstract as drawn from the report is as follows:—

1st case—a child of four years. *Stone* nearly an inch in diameter. It was very fragile, but required six operations for its removal. *Accidents.* Two fragments, at two different times, became engaged in the urethra, occasioning "a great deal of suffering." *Result.* Cure. 2d case—age five years. *Stone* about the same size, destroyed by five operations. *Accidents.* None mentioned. *Result.* Cure. 3d case—age not noted. *Stone* about the size of a filbert, partially engaged in the urethra; seized and broken with forceps with three branches. *Accidents.* On the morning following the first operation, a fragment passed the prostate gland, became arrested in the urethra, and caused "violent pain." Two days afterwards, another fragment was arrested in the same manner and produced the same consequences. It was repulsed with "infinite difficulty," nor was it broken with less. *Result.* The child ceased to suffer, but as the patient was unmanageable, the cure could not be rendered certain by sounding. 4th case—age four years. *Stone* very small, and broken twice with great ease, the child being admirably manageable. Four operations are noticed in the report. *Accidents.* At the third operation, a portion of the forceps remained in the bladder, *a fact only known to the operator*; this was removed a few days afterwards by means of another forceps. A fragment of the stone was engaged at the same time in the urethra, and could not be pushed back immediately. *Result.* M. Dupuytren took charge of the patient, pushed back the fragment, and performed the bi-lateral operation. The patient was thus cured. 5th case—age three years. *Stone* three or four lines in diameter. *Accidents.* None. *Result.* Cure after two operations.

M. Leroi, on this evidence, decides in favour of the possibility, but against the utility of lithotripsy in young children, except when assured that the stone is small. M. Velpeau coïncides with him fully in this opinion. We should go further, and object to the exception, believing that the attempt to *assure* ourselves of the size of calculi in the bladders of young children by means of any instruments known to us, would be little, if at all less dangerous than the operation of lithotomy, without proving always successful. *There are some questions in surgery which may be solved on plain principles of common sense, without the necessity of painful experiment.* But we anticipate.

M. Velpeau, not content with seconding the opinion of M. Leroi on this narrow question, has dared to open a wider field of discussion. He has attacked, in his report, the validity of the evidence

in favour of the general utility of lithotripsy, stating in good round terms, that the plan of breaking the stone deserves infinitely less eulogy than is generally bestowed upon it at present, and that in ten years from the present time, it will be practised much less extensively than at present.

"That which has given so much importance to lithotrity in the eyes of the world, is the fear of cutting instruments. It is the same fear that has made the fortune of caustics; of the *cura famis;* of compression in the treatment of cancers; of antiphlogistics, leeches, and divers highly praised local applications in lacrimal tumours," &c.

"Is it *pain* that they pretend to avoid by lithotrity? *The operation of lithotomy occasions infinitely less!* The same is true with regard to the duration of the operation, the danger of relapse, &c. If then lithotrity is a happy conquest of modern surgery, it must remain nevertheless, a method simply exceptional, when compared with lithotomy, after human reason shall be permitted to define its natural limits. Not only in children, but in adults also, it is attended by greater inconveniences than lithotomy whenever the stone is very hard or exceeds in size a walnut, (*gros noix,*) and when the patient has not too great repugnance to the latter operation."

After regreting the hallucination which he thinks prevents the lithotritists from perceiving the just weight of their own experience, M. Velpeau proposes two plans for estimating the relative value of the several methods. First, by comparing the mortality of calculus before and since the introduction of lithotripsy. "The work of M. Blandin, who alone has had the temerity to do so, proves already that in this point of view, experience pleads incontestably in favour of lithotomy." Secondly, by comparing the results of two equal groups of selected cases, in circumstances as nearly similar as possible, but treated on the two contending systems.

The report being presented, the academy commenced the discussion on the 5th of May. But one of the speakers, M Segalas, attempted to defend the operation of lithotripsy in children; the main feature of the report passed therefore with very little opposition, and the debate took the wider range, which the bold, sweeping charge of M. Velpeau was calculated to provoke.

The principal speakers in opposition to the report were MM. Amussat, Segalas and Lisfranc. Those who defended it with most warmth, were MM. Velpeau, Sanson, Souberbielle, and Pelletier du Mans. M. Roux held a station somewhat like that of moderator. We have availed ourselves in the following remarks not only of the publication which stands at the head of this article, but also the reports of the same debate in the *Gazette des Hôpitaux*, which contains a few remarks which have escaped attention in the

former. M. Amussat, who led the opposition, admitted that there was some ground for the charge of *exaggeration* made by M. Velpeau against the reporters of operations for lithotripsy, an operation which he did not advocate exclusively. But it is evident that he considered the exceptions rare, the operations improving, and that it promised to displace its antagonist in a vast majority of cases. He attacked also the statistics of M. Blandin, alluded to by the reporter, and advanced the opinion that it was impossible at present to obtain available details of this character because of the war existing between the partisans of the two methods. The other remarks of M. Amussat are rather ingenious than forcible—the mere opinions of Boyer and Dubois, however justly distinguished in their profession, are of less significance in a question of this character than the results of a few well observed cases, nor is it much more important that two eminent surgeons should have been preserved to society by lithotripsy while it continues debateable whether they would not have been saved with less risk by lithotomy.

M. Velpeau proceeded to state the accredited results, upon which were based his conclusion that the mortality from calculus in the hands of the friends of lithotripsy was greater than followed in the hands of the lithotomists. From this statement it appears that neither M. Amussat, M. Leroi D'Etoilles, nor Huerteloup have ever published complete accounts of their results, and their success or failure in selected cases should weigh but little in a general question. There remain the summaries of MM. Civiale and Bancal, together with certain private information communicated by M. Leroi, but which M. Velpeau did not feel warranted in stating, and some data of more ancient date. The evidence furnished by these is far from favourable in the opinion of M. Velpeau. He stated that of eighty-three cases *operated on* by the most able lithotritists, forty-two were cured, thirty-eight died, and of the forty-two cured, nineteen had serious accidents—a result which he acknowledged was "very different from that which appears on the face of the tables, (Raport Larrey.") We shall speak of the causes of this discrepancy hereafter.

This terrible mortality, amounting to one death in a little more than 2½ cases, will doubtless startle the reader! but the defenders of lithotripsy remark, that the operation has been vastly improved within a few years, and that it is unfair to include the earlier cases in a comparative estimate. M. Velpeau replies, that of twenty-four patients subjected to this operation at l'Hopital Necker, fourteen are cured, eleven are dead! Of forty-three (45?) operated on since

that period, fifteen are dead, thirty are cured; ten other cases retain their stone. Of thirty cases published by LEDAIN, in the Gazette des Hôpitaux, four retain their stone, eight are dead, and eighteen cured.

Rejecting the evidence of Bancal's report quoted by M. Velpeau, but evidently of no fair value in the premises, and the results drawn from M. Civiale, about which there is a warm dispute, which we must discuss in the sequel, we have still remaining sufficient data to show an apparent mortality of more than one in three!

A catalogue is then given of results in lithotomy, drawn from various authorities in Europe and America, which give results as follows. In England, the Continent and America, 5,873 cases of stone. Proportion of deaths one in a little more than eight.

A careless observer might well consider the question of the relative merits of the different methods decided, after such an expose as is given above; but let us take a single tabular result from the other party, and there are several such. M. Lisfranc, quoting the article of M. Begin in the *Dictionnaire de Médecine et de Chirurgie Pratiques*, states that M. Civiale lost but five cases out of two hundred and forty-four treated by lithotripsy! which after rejecting three cases in which the stone was not effectually removed, gives the proportion of 1 death in 48½!

On the one hand M. Velpeau, drawing his information not from the tabular view of M. Civiale, but from his detailed cases and the report of M. Larrey, presents us with the following picture of the result just noticed. Total of cases two hundred and forty-four. Cured one hundred and thirty; dead or retaining the stone one hundred and fourteen! On the other, M. Civiale, in his letter, taxes M. Velpeau with misinterpretation, or neglect of the most important documents, furnished by him to the academy; while in the debate M. Amussat attacks the validity of the statistics brought forward in defence of lithotomy. How shall we explain this disagreement? The question must be met.

We are in the habit of placing the most implicit faith in the facts avowed by the learned and most industrious reporter, and we see no reason to question them in the present instance; but we are in the habit of weighing them strictly. More than once in the course of the debate, the imperfection and exaggeration of the reports of lithotomy are acknowledged by M. Velpeau, but he defends the propriety of meeting one exaggeration by another. He says, *and proves too*, what is so honestly acknowledged by M. Amussat, that the lithotritists present their facts in false lights, and found upon them inaccu-

rate conclusions in favour of their peculiar method, (*Vide Bulletin in Gaz. des Hop. May*, 1835.) The same charge is obviously true with regard to the lithotomists, and M. Velpeau acknowledges its truth with regard to the data employed by him, finally relinquishing any proportion of deaths in lithotomy founded on his tables, and adopting one against which none of his antagonists can object; namely, one death in four cases. But in his statements of conclusions drawn from the documents of the lithotritists, his partisan leaning is still strongly obvious. He speaks as a debater, not as a philosopher. He states, with the evidence within his reach, that M. Civiale cured but one hundred and thirty cases after two hundred and forty-four operations, while that surgeon claims two hundred and thirty-six cures. How many of those one hundred and thirty cases died, according to M. Velpeau? We are not told. How many deaths resulted from causes not connected with the operation? We know not. How many failed from defect of instruments or imperfect methods of operation, from the disobedience of the patient, &c. &c.? All is dark! Of what value then is such evidence in settling the general question of the comparative merits of the contending methods? We answer unhesitatingly,—none whatever.

The contest between MM. Velpeau and Civiale growing out of this debate has just commenced. What light it may hereafter produce cannot be foreseen, but at present it does not tend effectively to illustrate the main question. The work of M. Blandin noticed in our last number, leaves it equally undecided, notwithstanding the assertion to the contrary contained in the report. The adoption of the latter by the academy after such a warm contest, shows only that in the opinion of a learned body in France, the advantages of lithotripsy have been somewhat over estimated by its partisans, without establishing its relative importance.

In closing our remarks upon the report of M. Velpeau, and the debate to which it gave origin, we will endeavour to enumerate the deductions which may be fairly drawn from them, and which are not devoid of importance.

1st. It is conceded on all hands that when the bladder and urinary passages are in a healthy condition; when there is no contra-indication from visceral or other disease; when there exists but one stone, and this is not very hard or rugose; when the calculus is not larger than a walnut, the patient being an adult, and when the operator has great mechanical skill combined with professional tact, and a thorough acquaintance with the operation, in preference to lithotomy, lithotripsy—*ought to be attempted.*

2d. If there be a plurality of calculi, within certain limits, the other circumstance remaining the same, lithotripsy is equally proper. This is a corollary of the last proposition.

3d. That in all cases, where the urinary organs are healthy, or nearly so, and when the simple methods of sounding employed before all operations in calculus fail in detecting an unusual hardness or size of the stone, it is warrantable to employ lithotritic instruments in the endeavour to ascertain its character.

4th. That examination by lithotritic instruments may render a patient insensible, (Roux,) or may involve his life, (Velpeau;) hence the comparison of equality made by M. Rouchoux, between this species of examination and simple catheterism, is unjust in the highest degree.

5th. That the slightest operations in surgery, such as staphyloraphy, or suture of the perineum after rupture in delivery, *may* produce fatal consequences; hence simple sounding is not *altogether* devoid of danger. *(Roux.)*

6th. That the operation of lithotripsy is sometimes attended with so little pain, as to be likened, by a patient who had been frequently subjected to it, to the extraction of a tooth. *(Amussat.)*

7th. That it may be regarded as questionable, whether the average amount of pain suffered in operations for lithotripsy, employed on the recent extensive scale, is in any degree less than that of lithotomy.

8th. That it is *at least* questionable, whether the serious accidents following lithotripsy are not more numerous than those following lithotomy.

9th. That it is not possible to determine with absolute certainty the completion of the cure in lithotripsy, but the proof of the removal of the last fragment may amount exceedingly nearly to certainty. *(Lisfranc.)*

10th. That the dangers of the operation may be much diminished by previous general treatment in some cases, and the pain may be sometimes lightened by previous catheterism, but this is not always the case, for the tenth session may be more painful than the first. *(ib.)*

12th. That it is impossible to determine by any statistical accounts now on record, the relative importance or success of the two methods, or to determine the same question by the first method proposed in the report.

13th. That the objection advanced by M. Amussat against the second method of ascertaining this point; namely, the cruelty and inhumanity of the test, is a petitio principii, and devoid of weight.

14th. That a comparison of success between an equal number of grave cases of calculus treated by the two methods, would be an injustice to the claims of lithotripsy; that a group of mild cases similarly employed would produce results unjust to lithotomy, and if a group of cases of a middle character were chosen, which would be accomplished with difficulty, the result would be an approximation to truth, dependent for its value upon the multitude and minuteness of observations *faithfully reported.*

These conclusions are all that we think can be fairly deduced from the academic debate, except one, which we shall notice hereafter; but if we may be permitted to include in the survey the correspondence mentioned at the head of this article, and the work of M. Blandin, already involved in the discussion, we should feel fully warranted in representing both the contending methods as still in their infancy. While the different lithotritists are contesting the merits of each other's instruments, (Velpeau,) and the various lithotomists, the claims of their several incisions, how can either method be regarded as even approaching perfection? We, therefore, think it quite possible, that an era may arrive, in which lithotripsy will enjoy a much higher rank among surgical operations than it can fairly claim at present. We may say the same for lithotomy. There is nothing in surgery incapable of improvement, and M. Velpeau's prediction, that lithotripsy will be held in much less estimation ten years hence, may yet fall to the ground.

Much was said, during the discussion, of the value of statistics in surgical questions of this character. They are, as M. Roux remarked, *of some value,* but the extent of that value depends upon the fullness of the details, and its depreciation, upon the misapplication of the evidence. If we dared to draw our conclusions of the relative merits of the two methods of treating calculus from the evidence within our personal knowledge, they would be considerably more favourable to lithotripsy than those of M. Velpeau. Of fourteen cases treated by lithotripsy by surgeons of our acquaintance, one died by causes totally foreign to the operation; one was subjected to an attempt which failed, owing to the excessive pain it occasioned, and the patient was afterwards cured by the lateral operation; and twelve were cured. The result of fifty-two cases of lithotomy in the Pennsylvania Hospital, as given in the table, (p. 97,) of this number, gives a proportion of 1 death in $7\frac{3}{7}$. It should also be remarked that the lithotritic instruments employed in the two first mentioned cases were of American manufacture, in some respects peculiar, and since judged imperfect. Eleven operations performed by Dr. Randolph, of this city, have all

proved successful. In proof of the danger of the misapplication of statistical details, we will merely observe, that the table to which we have referred, establishes the fact that the mortality from lithotomy at the Pennsylvania Hospital, from 1756 to 1802, was 1 in 13 cases; from 1802 to 1822, 1 in $7\frac{2}{3}$ cases; and from 1822 to 1832, 1 in 3. Yet those who know any thing of the institution would smile at the idea that these circumstances argued either a deterioration in the skill of the operators, or in the modes of operating.

A few words on the correspondence between the reporter and M. Civiale, and we shall close our remarks for the present.

It will be recollected that according to M. Velpeau, but one hundred and thirty cases were cured by the operation of lithotripsy, as performed by M. Civiale on two hundred and forty-four patients. The latter surgeon in his letter, which must be regarded as still higher authority than the report of M. Begin, already quoted, insists on the truth of the following statement. Number of cases operated on by lithotrity since 1824, 244; cured, 236; deaths, 5; continue to suffer, though no longer labouring under stone, 3.

This monstrous discrepancy is greater than can be fairly explained by the acknowledged party leaning of the two observers. The charge of intentional misrepresentation is defeated at once by the high character of the opponents; and that of culpable ignorance of the documents, advanced by M. Civiale against M. Velpeau is utterly overthrown by the acknowledgment of the latter in his reply.

"At the academy, M. Civiale might have assured himself that if facts have been altered, it has not been by me; and that I am also acquainted with the memoir which he has inserted in the fasciculi of the academy, and it is precisely because he has taken the precaution to publish all his observations, that I have arrived at results in figures so different from his."

How then is the discrepancy explained? We have devoted no small care to the solution of this question, confining ourselves to the evidence before us. It appears pretty evident that M. Velpeau has founded his calculations upon the whole amount of evidence produced at various times before the academy, &c. including all the communications of M. Civiale, his publications, clinical records of hospitals, private letters, verbal information, personal experience, &c. &c. The public is furnished with his conclusions, but with only a part of his data.

As it regards the question at issue with M. Civiale, it seems that he has selected from the cases reported by the latter surgeon, two hundred and forty-four observations in which the operation of lithotripsy was, *in his opinion*, performed. The character of the commen-

tator is a sufficient guarantee for the fact, that of *these* two hundred and forty-four cases, but one hundred and thirty were *cured.* But there is an important breach in the chain of evidence. We are no where exactly informed what M. Civiale regards as a lithotritic operation, nor are we made certainly acquainted with the circumstances which he considers as a sufficient proof of cure. M. Civiale has defined what *he* considers an operation. "I have said, in the last fasciculus of the academy, where the exploration terminates, and where the operation begins."—*Letter to the Academy.*

The last fasciculus has not yet reached us, and we can only infer the opinion of M. Civiale, from the following passage in his letter, and from the remarks of M. Velpeau; but the inference is very plain.

"As to the pretention which has been advanced in some writings expressly designed to depreciate lithotripsy; to consider as real operations the preliminary examinations that are necessary to determine the condition of the patient, and to ascertain whether the operation can or cannot be performed; if any thing could surprise us, it is that this pretention should again make its appearance in the academy." *loc. cit.*

It is evident, from these passages, and the conflicting statements of the parties, that the two hundred and forty-four cases of operation, chosen by M. Velpeau, from the returns of M. Civiale, even if the acknowledgement of the former to that effect had been wanting, are not the same two hundred and forty-four cases acknowledged to have undergone the operation by the latter surgeon. We have then two series of observations reëntering and becoming confounded with each other at various points, and the conclusions drawn from one series can be of no value in estimating the accuracy of the other; the very attempt to use them for such a purpose is to a certain extent unfair.

The next question of any interest to the profession, is the value of the tabular result of each of these series considered separately, as elements of statistical calculations. That of M. Civiale's report, hangs on the validity of his definition of a lithotritic operation, and the nature of the manipulations exercised upon those patients whose cases fall without the definition. Let us hear M. Velpeau on this subject.

"As for myself, I have made use of the facts published by M. Civiale, thinking it impossible to draw them from a better source. Nevertheless, seeing that we build on the same foundations, how comes it that we differ so widely in our calculations? M. Civiale positively refuses to admit, that the examinations, the attempts that are made to recognise the existence of the stone, to seize it, or to break it with instruments, should be considered as operations. This is an

idea that we find in all his writings. Let us see, now, the nature of these preliminaries. The litholabe, the brise-pierre, or the purcussor, are introduced into the bladder, where one extremity is made to move about, in order to ascertain the existence and the situation of the stone. Then the instrument is opened; the branches are separated, to seize or embrace the foreign body, and to ascertain its dimensions and its form. Finally, an attempt is made to perforate, to crush, or to break in pieces the stone, by acting on the other extremity of the lithotritor, which is large and straight, in the urethra. It is repeated one, two, or three times, at intervals of a few days. It may now, perhaps, be demanded of me, in what respect the operation differs from these preliminaries. Truly, I know not! It has always appeared to me that, *once in the bladder*, the instruments expose the patient to as much danger when they manœuvre in the empty space, or fruitlessly, as when they act with real efficacy upon the calculus."—*Lettre de M. Velpeau.*

There is nothing in the evidence before us to contradict the truth of this picture—there is even something to strengthen it. However the advocates of a novelty may allow their vision to be obscured by their desires, the good sense of the profession will never permit it to sanction such definitions. It is in vain to pretend that there is any parallelism between simple sounding, as employed by lithotomists, and the incalculably more dangerous, though more accurate examinations of the lithotritists. Even catheterism by straight instruments, is not positively proved to be quite so *safe* as that performed by curved instruments, although we are quite prepared to defend its vast *superiority* under many circumstances. The urethra is not a straight canal—the force required to render it so, *may be* almost harmless, but this question is still *sub-judice*. Not so, straight catheterism, with instruments which distend the canal beyond its natural limits. The danger incurred in *these* is proved by many observations, and properly forms an element in all calculations of danger from operations requiring their use. We have authority to show that the simple dilatations preliminary to the operation of lithotrity, may be productive of fatal consequences. Such consequences occurred in the cases of MM. Michali and Chevals, *(Première Lettre M. de Souberbielle.)* How much more dangerous then, the complicated *examinations* in lithotripsy.

Death *may* follow simple sounding, as was very fairly argued by M. Lisfranc in the academic debate, but setting aside the extreme rarety of such a result, the fact may be neglected in calculating the the relative dangers of the different methods of performing lithotomy, because this danger is incurred equally in them all; but when comparing the results of two methods having nothing in common, either

in the preliminaries, or in the after-steps, each must be charged with the ill consequences of every *necessary* manœuvre, whether diagnostic or therapeutical, or there can be no justice in the comparison.

From false views upon this subject, the tabular results of M. Civiale lose their value. With regard to those of M. Velpeau, they are sufficient to show a greater amount of failure *in attempts at lithotripsy* than we were prepared to expect—far—very far greater than we could have supposed probable from the known results of the few operations as yet performed on this side of the Atlantic! But as we know nothing of the mode in which the series of observations were selected from the mass furnished by M. Civiale, nor of the extent to which the latter may have extended his preliminary examinations beyond what we should consider their legitimate bounds; and as we are equally ignorant of the degree and nature of the failures, so called, in each individual case, we must confess that we cannot safely draw conclusions from the data.

The two letters of M. Souberbielle are replete with evidences of the misapplication and failure of lithotripsy, but the point most completely elucidated by them is, perhaps, the value of the assertion made by MM. Amussat and Lisfranc, that the general introduction of lithotripsy will lead to the earlier announcement of the existence of calculus on the part of patients, and hence, to the proportionate increase of the number who will apply for surgical aid before the stone or the urinary organs have fallen into such conditions as are calculated to render doubtful the propriety of the operation. The letters contain sufficient proof of the fact more than once alluded to by M. Velpeau, that stone may exist for many years, and may acquire great dimensions before its presence is even suspected by the patient.

The evidence of M. Souberbielle tends also to prove, that the number of cases which form acknowledged exceptions to the applicability of lithotripsy, bears a much larger proportion to the whole number of calculous affections than is supposed by MM. Amussat, Lisfranc, and other partisans of this operation. This, however, is a matter of minor importance. The only question really interesting to surgeons, is the degree of comparative danger attendant upon the operation in those cases in which its performance is considered warrantable and preferable to lithotomy. We have little sympathy with those who personify contending plans of treatment, and talk in glowing terms of "la gloire de Lithotritie." There is a little too much of this disposition displayed in the academic debate. With us there is but one excellence in any plan of treatment—its utility. We rise fatigued and dissatisfied from the study of the debate and corres-

dence, with a strong hope that the labours of M. Double, in whose hands the details of M. Civiale's observations are placed, and the anxiously desired returns of MM. Amussat, Huerteloup, &c. &c. will soon place the profession in possession of more valuable data. At present, the cause of an operation, the extension of which we ardently desire and confidently expect, appears to be suffering almost as much from its friends as from its foes. We have been led thus prematurely into a long notice of this operation by its great importance in surgery, and the anxiety of the profession on the subject, and shall endeavour hereafter to keep pace with the current of events. R. C.

ART. XII. *Illustrations of the Elementary Forms of Disease.* By ROBERT CARSWELL, M. D. Professor of Pathological Anatomy in the University of London. London, 1833–4. Parts 4, 5.

THE fourth and fifth fasciculi of Carswell's pathology sustain the impression expressed in a former number of this journal, (No. XXVIII. for August, 1834, p. 418,) that Dr. Carswell possessed the requisite ability and the peculiar cast of mind requisite for the arrangement of the morbid products under a systematic and natural classification. The fourth number embraces an account of those degenerations, which, from their peculiar colour, have been termed *melanic.* Melanoma is defined by our author as "a morbid product of a black colour, varying in its intensity, humid, opaque, and of the consistence and homogeneous aspect of the tissue of the bronchial glands of the adult."

As some difference of opinion exists among pathologists as to what productions should be classed under the head of melanosis, the work before us divides them into *true* and *spurious;* by this arrangement every morbid product resembling melanosis will be provided a location; while true melanotic degeneration will be more accurately and clearly defined.

True melanosis is a a morbid product of secretion of a deep brown or black colour, presenting no evidence of organization; its form and consistence vary greatly, and are dependent upon the influence exerted by external agents. The most frequent location of this deposit is on the serous surfaces, and in the cellular tissue entering into the formation of organs; not unfrequently it will be found blended with the molecular structure of the organ, as by the process of nutrition; lastly, it sometimes exists in the blood, and particularly in that found

in the venous capillaries. The physical characters of true melanosis comprise the form, consistence and colour, which it assumes in the different structures of the body.

Form.—The condition in which Dr. Carswell found melanic productions was either in points, which he styles punctiform, or in nodes or masses,—the tuberiform; in layers, the stratiform; or in the fluid state, the liquiform.

The punctiform arrangement of melanosis is most usually found in the liver, scattered through the organ in small dots, which when examined by the microscope, have a stellated or penicillated distribution, and in many instances can be distinctly seen to be the black matter in the extreme terminations of the venous vessels. At other times it is found to be deposited in the molecular structure of the organ, and intimately blended with the natural elements of the acini. The morbid material in this arrangement varies from a gray to a deep black hue.

Tuberiform melanosis is by far a more frequent occurrence than either of the other forms, and is situated on the serous surfaces, in the cellular and adipose tissue, or in the structure of every organ. When located on the serous surfaces, the form is generally globular; while the masses deposited in the substance of organs vary greatly in form and volume. This arrangement is frequently found united with the punctiform in the liver, and appears to be an advanced stage of it, depending upon successive depositions by the nutritive power of the organ. The suggestion would naturally arise, that if this is but a state or stage in the development of the first, it is unnecessary to constitute it a distinct class. We cannot for our own part discover any satisfactory reason for separating these two forms, unless it is designed to distinguish those punctiform deposits which are stellated or penicillated before the lens, from those which are essentially confined to the acini and dependent upon the process of nutrition for their development, and which alone can give rise to the second character of melanosis.

When the melanotic tumour is incased in a fibrous sac, it is said to be encysted; this form is found only in the cellular or adipose tissue, and is owing to the gradual distension and condensation of the cellular texture. The stratiform melanic deposition is met with upon the free surfaces, and consists in a distinct layer, resembling jelly spread over the surface, and is enclosed in a soft and spongy cellular tissue or delicate transparent serous membrane of new formation. It is not often met with in man, but in the horse it is frequently found upon the peritoneum, pleura and pericardium. Li-

quiform melanosis is generally confined to natural or accidental serous cavities; the peritoneum and pleura are the only membranes which have as yet furnished instances of this character of degeneration. Dr. Carswell has never found it in man as a product of secretion, but has seen it as the consequence of the destruction of melanotic tumours, and the effusion of their contents into serous cavities when their walls had been perforated. Breschet, Andral and Cruveilhier, have discovered the liquiform melanosis on the surface of the mucous membrane, or in the cavity of the stomach; but our author thinks they have confounded it with the discoloration of the blood, which is produced by the action of the gastric juice upon it when effused.

The bulk of melanotic tumours is extremely variable, varying from a mustard seed to the size of an orange. The largest masses being found in the loose cellular tissue; sometimes a single and entire mass; at another composed of an assemblage of smaller ones. The colour, like the bulk of the tumour, is not determinate, presenting us every shade, from a light brown to a deep black; this variety in shade is not so much owing to the colouring matter which enters into the formation of this morbid production, as to the quantity of cellular membrane blended with it.

The consistence of melanosis is determined by two circumstances—the texture and form of the organ in which it is located. If the deposit is on a free surface, or in a loose cellular texture, then the matter is found in the fluid state; on the contrary, if the texture of the organ is dense and firm, it assumes a compact of solid consistence. Laennec asserts with great confidence and pertinacity, that melanosis is from the onset of its deposition a solid product; this opinion, however, is ably confuted by the concurrent testimony of many highly reputable pathologists; indeed, many agree with our author, that on the free surfaces of secreting membranes it is always fluid in the commencement, and when thereafter it becomes solid, it is dependent upon the cellular tissue in which it is deposited. The solid deposit after a given time ceases to increase in bulk, and ultimately softens and assumes almost the fluid state. This process of softening is not accomplished by any vital power of the melanic deposit or its surrounding texture, but is effected solely by the destruction of the tissues which envelope or enter into its composition, and the simultaneous effusion of serosity. Inflammation seldom or never accompanies the softening of this matter, and whenever ulceration or sloughing occur, they are owing entirely to the obliteration of the vessels of the texture, by the morbid product in its

development pressing upon them. Our author sums up the physical characters of melanosis in the following words:—

"This matter is quite opaque, and has no marked odour or taste. In its natural state, or when mixed with water, exposed to the air it becomes dry, brittle and pulverizable, and does not emit the odour of putrefaction until after a long period. When burnt, it swells, gives out a great deal of smoke, a marked empyreumatic odour, and is converted into a carbonaceous substance."

The chemical characters of true melanosis have been examined with great care and accuracy by Lassaigne, Foy, and Barruel, in France, and Dr. Henry, of Manchester. Barruel asserts that melanosis of the human subject is composed of the colouring matter of the blood united with fibrine, both of them being in a peculiar condition, (*"se trouvant dans un etat particulier,"*) three distinct kinds of fatty matter, and a considerable quantity of the phosphate of lime and iron. Foy, after repeated examinations of melanotic tumours in the horse, reports as the result of his observation—

Albumen	15.00	Muriate of potash	5.00
Fibrine	6.25	Ditto, soda	3.75
A highly carbonized principle, probably altered cruor	31.40	Carbonate of soda	2.50
Water	18.75	Ditto, lime	3.75
Oxyds of iron	1.75	Ditto, magnesia	1.75
Sub. phosphate of lime	8.25	Tartrate of potash	1.75

Thus it appears that melanosis is composed of the constituents of the blood, and derives its colouring principle from a highly carbonized principle analogous in some measure to the colouring matter of the blood. We shall present the anatomical characters of melanosis in the language of our author.

"We have seen that the melanotic matter, in the form of a round tumour, may lie in immediate contact with the substance of the organ in which it is deposited, or may be bounded by a membranous capsule. When a single tumour of the latter description is divided, and a quantity of the melanotic matter is removed from it by pressure and ablution, a multitude of fine filaments and lamellæ are seen connected with the capsule, traversing its contents in every direction, and presenting an appearance resembling cellular tissue when distended with serosity."

"When a number of melanotic tumours are grouped together, they are included in a common capsule, and separated from one another by their respective coverings, and portions of cellular tissue contained in the angular spaces sometimes left between them. It is in these filamentous and cellular tissue alone that blood-vessels or nerves are to be seen. Minute arteries and veins may be observed ramifying in both, but they never pass beyond the limits of these tissues. Large branches, and even trunks of arteries and veins, are sometimes found passing over the surface, or included in the aggregated masses of melanotic tumours.

Our author remarks, that melanoma is more frequently combined with carcinoma than any other morbid condition, although there is no similarity either in their anatomical, physical or chemical characters.

We shall now pass on to those depositions which are styled *spurious.* These products arise either from the introduction of carbonaceous matter into the organic textures, and are confined solely to the lungs, or from the action of chemical agents on the blood. The lungs under this form of disease present us with a black carbonaceous colour, which pervades all the tissues, and is distinctly recognised in the bronchial glands; the texture of the lung is rendered friable and more readily lacerable. Dr. Christison has reported in the Edinburgh Medical and Surgical Journal, No. 109, the result of his analysis of the black matter from a patient of Dr. J. C. Gregory, which presents the following points of interest. The colour suffered no change when boiled in concentrated nitric acid; a strong solution of chlorine did not in the least affect it; caustic potash in a strong solution took up some animal matter, which, when filtered, gave us first an opaque black portion, which was followed by another of a pale yellowish colour. The black powder which remained upon the filter when dried, burned readily, and resembled the combustion of charcoal, leaving behind a pale gray ash.

A small portion of the black matter which remained after boiling in nitric acid was treated in the following manner. Having been well washed and dried, it was introduced into a glass ball, with a tube attached, which was subsequently drawn out by means of a spirit lamp flame to a fine bore.

"On the application of a low red heat to the ball, there was disengaged, at the open end of the tube, a considerable quantity of gas, which had the odour of coal gas, and on the approach of a light, took fire, and burned with a dense white flame. In the tube a dark yellow fluid likewise condensed, which had very exactly the odour of impure coal-tar naptha, and became a soft mass on cooling, of the consistence of lard. This, when compressed between layers of filtering paper, yielded an oily stain to the paper, and left a white matter, which dissolved in boiling alcohol, and separated again on cooling, in minute obscure crystals."

Dr. Christison remarks, that in the result of this experiment, it is impossible not to recognise the ordinary products of the distillation of coal.

"A gas," says he, "of the same quality was procured, and likewise a naphthous fluid holding in solution a crystalline principle, analogous to, if not identical with naphthaline."

The case cited above by Dr. Gregory, is pregnant with interest,

since it clearly demonstrates the correctness of Laennec's view, that the discoloration of the lungs may take place by the inhalation of the carbonaceous matter from ordinary combustion. Dr. Carswell thinks that the uniform black hue of both lungs—the fact that no other organ takes on this character of degeneration—the frequent occurrence of disease in those who are constantly exposed to coal dust—and the identity of the colouring principle with the inhaled matter, clearly and conclusively demonstrate the origin and nature of spurious melanosis of the lungs.

Another form of spurious melanosis results from the operation of an acid chemical agent, acting upon the blood; and is confined to those organs in which this acid exists either as a healthy secretion, as in the stomach, or where it is occasionally produced by an alteration in the chemical condition of the contents of these organs, as in the intestines, from the anormal formation of a fluid or gaseous product. The blood when subjected to the action of these acids varies in colour from an orange tint to a deep black, the latter being the most frequent, and is found either while blood is yet contained in the vessels, and constitutes a part of the circulating mass, or extravasated in the cellular membrane, or upon the free surfaces of serous membranes, or poured out into the cavities of the hollow organs, thereby assuming the punctiform, ramiform, stratiform or liquiform arrangement.

When from any mechanical cause the circulating blood is retarded, or interrupted in its course, it is found to assume a darker hue, and this is particularly manifest in the venous capillaries, in which the circulation is not unfrequently entirely arrested, and a separation of the serous from the solid constituents of the blood takes place. The serum with the salts escape and are ultimately absorbed, leaving behind the fibrine, of a dark blackish hue; this change of colour according to Dr. Stevens, is owing to the removal of the salts, which give to the blood its peculiar red colour. This form of melanosis is usually found in the respiratory or digestive organs.

In the lungs it is attributable to those diseases which obstruct the circulation, and is either confined to minute spots, or diffused generally through the entire organ. Laennec styles this discoloration the "*matière noire pulmonaire.*" This character of discoloration of the lungs may be distinguished from the melanosis of this organ, from its never assuming the globular form.

The black discoloration from stagnation in the digestive organ, presents nearly the same characters of spurious melanosis produced by the action of an acid; it is however always confined to the villous and follicular structures of the mucous membrane.

Ramollissement is a term applied by the French pathologists to a morbid state of the different textures, in which there is a diminution of their healthy and natural consistence. The cause of this state is referred to an undue vascularity or hyperæmia of the texture, and is therefore one of the ordinary attendants upon inflammation; but when we reflect upon the frequent occurrence of softening under circumstances of an entirely different character, in which, instead of an exalted action, we were warranted in the presumption, that the parts were in a state of anæmia, a diminished vascularity, we cannot but unite with Andral, in referring this form of lesion to a derangement of the nutritive apparatus, and the result of an interference with that vital force which binds together the integrant particles of the several tissues, and retains them in union. Any disturbance of the circulation by which the vitality of the textures would be assailed, either by an obstructed circulation, or an imperfect nutrition, dependent upon a scanty, or impoverished supply of food, would prove an efficient cause for the development of this morbid condition. Thus it is, that children born in a debilitated state, and cachectic individuals, are characterized by this degeneration, varying in intensity from the softened integuments and flabby flesh, to an entire and complete destruction of the different organs and tissues With the above principles before us, we can readily imagine how obliterated arteries may also become the cause of softening. To the changes which occur during life, may be added a similar state of things taking place after the death of the individual, and dependent entirely upon chemical and physical causes, viz. the solution of the mucous membrane by gastric juice; or the infiltration of the tissue by some of the fluids producing a species of maceration; or a loss of cohesion from the putrefactive decomposition.

Softening from inflammation, according to Dr. Carswell, arises from an accumulation of blood in the capillaries, followed by an effusion of serosity, and not unfrequently accompanied by the deposition of coagulable lymph or formation of pus. The assimilable materials are no longer furnished, and the function of nutrition is completely suspended.

"A diminution in the consistence of the tissue thus situated, follows; the degree of which, will vary with the duration of the suspended function, and the degree of cohesion possessed by the tissue in its normal condition."

The process of softening is carried on by the united operation of a mechanical and vital agent: the molecules no longer bound together by the vital power, in consequence of the nutritive action being arrested, the effused fluid insinuates itself between them, and thus

mechanically effects an entire separation, the result of which is recognised in the lessened consistence of the original texture. The physical characters of *inflammatory softening* are found to vary not only with "the duration on which the softening depends, and the natural difference of consistence of the tissue on which it takes place, but also with the structure of the affected organ, and the quantity of blood which it contains."

The degree of inflammatory softening of the cerebral mass may range from a slight deviation from its natural consistence to a cream-like fluid. In the beginning of this change, the continuity of the organic particles is but little disturbed, and not entirely separated from the surrounding structure; while in the advanced stage the molecules are entirely separated, and a part of the broken down cerebral mass removed, and if the softening is circumscribed or partial, a line of demarcation between it and the healthy substance is distinctly visible. Ramollissement of this organ must present us with various hues, according to the amount of vascular turgescence, the change effected upon the colour of the circulating blood, and the effusion of serosity or formation of pus; nor does the stage in which we examine the morbid product exert an unimportant influence over the colour; for the first stage is always characterized by its redness, while it gradually subsides as the pathological state progresses. When the substance of the brain is cut in the early stage of ramollissement, where the vascularity of the part is in its greatest degree, the exposed surface is studded with dots from the effusion of blood by the lacerated capillaries, or marked with purple lines arranged in an arborescent manner, or as is frequently found, the blood is poured out, and generally diffused through the softened mass, presenting the appearance of hemorrhagic apoplexy; moreover the softened mass will sometimes assume a *leaden* hue, owing to the minute and complete injection of the capillaries, both arteries and veins.

Redness must not however be esteemed an invariable attendant upon ramollissement from inflammatory action, since the effusion of serum in large quantities by pressing upon the arterial capillaries may prevent the ingress of the red particles of the blood, and give rise to an anemic condition of the cerebral mass; this state of things is usually found after hydrocephalus. To this may be appended the yellow degeneration produced by the presence of pus, and is usually found in close proximity to the meninges of the brain.

Inflammatory softening of the mucous membrane.—"Softening of the mucous membranes in general is a very frequent occurrence, but it is much more so in some than in others, and most of all in the digestive mucous membrane."

The frequent occurrence of disease, and particularly of softening in the gastro-intestinal mucous membrane, constituted the basis of Broussais' theory of fever, and although it is not always the sequel of inflammatory action, still its dependence in so many instances upon this state of the vascular system, warrants the conclusion of the French pathologist, that it should be taken as a strong argument in support of his pathological views in reference to essential fever. To arrive at a satisfactory opinion on this subject, it is always necessary to ascertain how far the softening is the result of previous exalted action in the capillaries, and how much depends upon the ordinary loss of cohesion from putrefaction, or the action of the gastric juice after death.

"Softening of the mucous membrane of these organs, (stomach and intestines,) presents, in regard to degree and extent, the same variety as in the brain. In the first stage the mucous membrane, instead of possessing that degree of cohesion peculiar to it, in different portions of the alimentary canal, and which permits of its being detached from the submucous tissue in pieces of considerable size, breaks when seized between the fingers or forceps; in the second stage, the edge of a scalpel, or even the finger passed lightly over its surface, converts it into a soft, somewhat opaque, creamy-looking pulp; and in the third stage it is so completely softened and detached, that a gentle stream of water poured on it from the height of a few inches, removes it entirely from the surface of the submucous tissue. It is important to observe that in all these stages the softened mucous membrane is more or less opaque; it does not present the transparency which accompanies softening from the chemical action of the gastric juice. In the former case, and in the last stage of softening, it resembles a mixture of flour and cold water or milk; in the latter, the same materials after having been submitted to the action of heat."

Of the extent to which inflammatory softening may be carried in this texture, Dr. Carswell remarks:—

"The extent of inflammatory softening of the mucous membrane is extremely variable. It may be limited to a small portion, or comprehend nearly the whole membrane. It has been described as extending from the mucous membrane to the other tunics of the stomach and intestines, and terminating in perforation of these organs. Such, however, does not appear to me ever to be the result of inflammatory softening. It is the consequence of the chemical action of the gastric juice."

We might be disposed to admit our authors conclusions, were we not prone to deny the existence of this great and mighty solvent. Our incredulity is based entirely upon the evidence afforded by the advocates of the opposite view, and not a little increased by their contrary statements of its chemical characters and the various properties which it presents at different times. Some have proved it to abound in alkaline properties, others in the essential characteristics

of an acid, and all unite in the opinion, that this fluid owes its chemical character in a great measure to the kind of food taken. This contrariety of evidence upon an important question would lead us to infer that its properties did suffer alteration; and if so, we must be sceptical of its existence, as a physiological agent, since we are not acquainted with any organ in the animal system which can vary its secretion in such essential particulars, for the mere accommodation of the habits or caprice of the animal. But if we were able to explain away the above objections, we should only give place to others equally or more formidable. It is judiciously observed by Sir C. Bell, that physiological principles can only be admitted when sustained by reference to anatomy; the importance and correctness of this position can be fully appreciated by contemplating the magnificent results of his investigations on the nervous system, which originated the remark. If then we turn our attention to the mucous membrane of the gastric cavity, we find it in no essential particular different from that of the intestinal canal; its villosities are analogous in every part of the alimentary tube; the muciparous glands in the stomach are the same in development and structure with those of the duodenum or ileum. The blood-vessel distribution is essentially the same. Where then are we to look for the source of this fluid? To the gastric glands of Sir Edward Home? If we examine them with the microscope, they present us with no peculiarity; they are of the same structure and volume, and located in the same manner as the muciparous glands throughout the entire membrane. Should we be met with the assertion that a series of large glands has been distinctly traced at the cardiac extremity of the œsophagus in the beaver, wombat, granivorous birds, &c. which are strictly entitled to the appellation—gastric, and which may be presumed to be the apparatus for elaborating gastric juice; we would ask whether the fluid has ever been obtained from them, and whether they are not usually found developed in those animals which have an imperfect salivary apparatus, as for instance, about the œsophagus of birds? Dr. Elliotson remarks, (justly we think,) that so far from their secreting gastric juices, as understood by many physiologists, they are merely salivary glands.

Although the mucous membrane of the stomach is more frequently the seat of this morbid process than any other portion, it is not to be inferred that it is attributable to the action of the gastric juice, since that part of the gastric mucous membrane, with which the gastric juice is usually in contact, viz. at the cul-de-sac, is not often found involved, but most generally it is confined to the pyloric portion.

Dr. Carswell does not agree with M. Louis, that the degeneration in bands or stripes is the result of inflammatory process. The colour of the mucous membrane under this form of lesion is either red or pale.

"In the pale softening, the mucous membrane presents a pale grayish or yellowish gray tint, its natural colour being little altered; or it may be paler than natural, when it generally presents a milky aspect, owing to its being reduced to a thin layer, through which the colour of the submucous tissue is partially seen."

Inflammatory softening of the cellular tissue is one of the most important and interesting morbid states to which the attention of the pathologist is attracted, and more frequently overlooked from the presumption that the integrant parts or elementary structure of the organs are in a state of disease, and also from the prevalent opinion that the cellular tissue, in an eminent degree, resists morbid changes; but when we reflect upon its extreme vascularity, we readily recognise how it is brought under the influence of disease. When the cellular tissue surrounding or entering into the formation of the several organs is in a softened state, it is readily detected by the facility with which they are lacerated. The subcutaneous, submucous, and subserous cellular membranes are assumed to have lost their cohesive properties, when these textures are easily stripped off from their attachments. It is important to bear this in mind, as it will not unfrequently direct our attention to a diseased condition of the super-imposed membranes, which from their anemic state would not otherwise arrest the attention of a casual observer.

Obliteration of the arteries has only been traced as a cause of softening in the brain structure, and was first described by M. Rostan. It may arise either from ossific deposits or fibrous and cartilaginous degenerations of their coats; the extent of the morbid condition will depend upon the class of vessels primarily assailed; if the capillaries of a part are alone involved, it will be circumscribed and limited to that portion of the cerebral mass receiving blood from them; if on the other hand, the main trunk of the artery is the seat of the cause, as for instance, the internal carotid at its commencement, the entire mass supplied by its ramifications will be discovered to be in a state of degeneration. In the first case, the cause of the disease may be detected by working out the pulpy structure of the brain, when the minute vessels will be firm and not unfrequently entirely obliterated by the process of thickening; where the cause is seated in the main trunk it may escape the notice of the examiner, and can only be recognised by tracing the vessel from its origin

upwards, which should never be neglected in autopsic examinations where this state of the encephalon is suspected.

The attention of pathologists was first directed to the softening of the mucous membrane of the stomach after death by JOHN HUNTER, as "*digestion of the walls of the stomach after death*," and was referred entirely to the action of gastric juice. Dr. Carswell is induced to believe from his experiments that this kind of softening is of frequent occurrence, and must be strictly attributed to the acid properties of the contents of the organ, for which reason he prefers using the term "*gastric acid.*"

There cannot be a doubt in the mind of any candid and impartial investigator, but that our author's judgment, in this matter is led captive by preconceived notions or prejudices, and incredulous as we are, as to the powers of this agent, for reasons above stated, we are not the less so, when we find the sweeping assertion, that all those lesions described by M. Cruveilhier as "*ramollissement gelatiniform*," and those by Louis, as "*ramollissement avec aminicissement, et la destruction de la membrane muqueuse de l'estomac*," are none other than the results of the solvent powers of the gastric acid.

In concluding our review of Dr. Carswell's work, as far as it has been issued from the press, we should remark that each form of lesion is illustrated by handsomely executed plates on stone, and coloured with a precision and care, which cannot fail to impress the reader with the conviction that is contemplating faithful representations of the alterations of structure described in the text. A. L. W.

BIBLIOGRAPHICAL NOTICES.

XIII. *A Series of Twenty Plates, illustrating the causes of Displacement in the various Fractures of the Bones of the Extremities.* By G. W. Hind, Member of the Royal College of Surgeons of London; formerly House-surgeon to the Middlesex Hospital; late Curator to the Museum of Anatomy in the University of London. 4to. London, 1835. pp. 48.

We venture but little, in asserting that few subjects in surgery are less generally understood than the mechanical causes of displacement, and the mechanical action of dressings and apparatus in fractures. With most professional men it has become customary to neglect the operation of physical causes in questions involving vital phenomena; forgetful of the fact that such causes act a distinct, though subordinate part *in the performance of every vital function.*

Hence, in a department of surgery, in which the diagnosis and treatment depend mainly upon relations of a mechanical character, the surgeon too frequently approaches his patient deficient in the knowledge of the principles which govern those relations. Finding himself under such circumstances driven by necessity from his habitual modes of examination and reasonings in pathology, he is also liable to err on the other hand, and is exceedingly prone to depend in too exclusive a manner upon his partial acquaintance with the physical laws of motion and the direction of forces, regardless of the physiological peculiarities of the parts affected.

This double error is more or less conspicuous in every work on fractures with which we are acquainted, especially in those of the English schools. We say so without the slightest presumption, for alas! *it is much easier to point out defects than to remedy them;* and we took up the magnificent quarto of Mr. Hind, in the honest hope that it would afford some important illustrations of diagnosis or improvements of treatment. We are sorry to confess our disappointment. The very modest and unpretending preface indeed promises nothing of the kind; on the contrary, the text is therein declared to be simply illustrative of the plates, and both are intended chiefly to elucidate the causes and nature of displacement in the various fractures of the extremities, but to the description of each plate is appended a very short outline of the therapeutic indications and apparatus. In our remarks upon the work we shall have due regard to the intentions of the author.

The fractures portrayed and described in this treatise are those of the middle of the clavicle; the coracoid and acromion processes, and the neck of the scapula; the neck of the humerus, its shaft above and below the insertion of the deltoid, and the shaft immediately above the condyles of that bone; the olecranon; the coranoid process, and the shaft of the ulna; the neck and shaft of the radius; the shaft of both bones of the forearm in the middle of the arm, and also just above the wrist; the fingers; the trochanter major, and the neck of the femur, its shaft just below the trochanter minor, in the middle, and

just above the condyles; the patella; the tibia; both bones of the leg; the fibula above the malleolus: and lastly, the malleolus internus.

In running over the magnificent plates representing these accidents on a scale, in most of the figures, as large as life, the first thing that strikes us, is the imperfection of the series. With very few exceptions, the fractures selected are precisely those which least require graphic illustration on an extensive plan; for if we pass over those situated about the shoulder joint, that of the radius, and those of the neck of the femur, and its shaft immediately below the trochanter minor, all the others can be rendered perfectly intelligible by words alone, or by very simple diagrams. Not so those which are omitted by Mr. Hind; some of which require very careful dissection and study, and cannot be made clear to others without the aid of accurate drawings. Part of this field is entirely untrodden, and Mr. Hind must have had enlarged opportunities of exploration, as house-surgeon in a very large institution, and curator of a noble anatomical cabinet. We are therefore surprised that he has left unnoticed so many of the injuries of joints. Nothing is said of fractures of the clavicle external to the coraco-clavicular ligament, or of those which take place so near the sternum as to render the diagnosis obscure. Fractures of the lower angle of the scapula; the anatomical neck of the humerus; the shaft of the ulna immediately below the coronoid process; fractures of both the condyles of the humerus; detachments of either condyle separately, or of the extreme point of the internal condyle; fractures of the stiloid process of the ulna; all these are passed by without a word, or a figure! In the lower extremity also, no notice is taken of the distinction between fractures of the neck of the femur, within and without the capsule; not a suggestion with regard to fractures of the condyles of the femur!

But we must leave the sins of *omission* to speak of those of *commission*. In doing so we shall avoid, as much as possible, the faults which we think are chargeable upon the state of the science, and those which appertain to the national school to which the author belongs, in order to notice some of those for which he is personally accountable.

The first plate, which is an illustration of fracture in the middle of the clavicle, is drawn from a deformed subject, and displays, according to Mr. Hind, the ill effects of tight corseting in females. There is a decided impropriety in the attempt to represent two species of deformity in the same plate, when their character is such that their appearances mutually confuse each other; and the frequency of both accidents render it altogether unnecessary to do so. Moreover, illustrations of curvatures of the spine with misplacement of the ribs and sternum, are irrevalent in a work on fractures. In the corresponding text the clavicle is described as having "an arched form, the convexity looking forwards; it is also hollowed out on the lower side," &c. The fracture is stated to occur but rarely from direct forces, and when resulting from forces acting on the outer extremity of the bone, the bone is said to yield in the centre of the arch, its weakest point, in consequence of the approximation of its ends: now we hold it impossible to comprehend the varieties of fractures of the clavicle without more accurate ideas of its form. It is not simply arched forward, or forward and upward; it forms a curve of contrary flexure, with one long and slight anterior arch, and one short and rapid posterior curvature. Moreover,

reasoning mechanically, the centre of the longer arch is not generally the weakest point, when blows are received on the outer extremity of the bone. Mr. Hind in his conclusions has neglected the disposition of the cancellated structure of the extremities of the clavicle. It is indeed the most *frangible* point in cases of direct injury. Direct forces applied to the centre, frequently crush the bone at one extremity of the arch—almost always the outer one—but they also frequently fracture the centre itself when they are sharp or sudden in their action. Great pressure, or a heavy body moving slowly upon this part will break the outer extremity, while a quick blow with a cane or any small hard body in rapid movement may splinter the middle of the arch. On mechanical principles, when forces act on the shoulder, the bone is evidently more liable to yield in the inner extremity or centre of the smaller arch, than in any other situations, and it is also subject to fracture near the sternal articulation from like causes.

It so happens that the results of our own observations tend to show that the actual condition of fractures of the clavicle is consistent with these deductions from the laws of force, and the form and structure of the bone. Among the numerous cases we have seen, but few have laboured under fracture in the centre of the bone, and in nearly all these, fracture has been produced by direct forces. Of the fractures near the humeral extremity, two were occasioned by falls on the shoulder, a third by the pressure of a bank of earth. The instances of fracture from indirect causes, taking place near the humeral extremity about the point of junction between the two arches, have been much more numerous than those produced by direct blows on the bone. We have twice suffered this accident in our own person; once from a direct blow, on the centre of the great curve of the left clavicle, which caused fracture at the junction of the arches, and once when a boy, from the fall of a companion upon our left shoulder, while the right elbow rested on the floor, and the head on the hand of the corresponding side; which latter accident produced fracture at the centre of the posterior or humeral arch.

We are by no means disposed to argue in detail, the points in which we differ from the author, but must remain content with a passing remark on the more important objections to his style or matter.

The plans of treatment recommended in fractures of the acromion and coracoid process of the scapula, are not original with the author, and we therefore wave all discussion of the possibility of putting them effectively in practice. They have been repeated from father to son, or rather from prophet to neophite, and the extreme infrequence of these accidents is probably the reason of their escaping the severity of criticism which they justly merit. But if it please our author to adopt a particular method, on high authority, without the test of experiment, it is at least incumbent upon him to describe the method in such a manner as to render it clearly intelligible even to his duller readers. We copy the following passage from the description of the treatment for fracture of the coracoid process. After directing a small pad to be placed in the axilla, and there supported by a band crossing the shoulder; the arm of the injured side being carried across the front of the thorax, with the forearm flexed and the hand grasping the shoulder of the diseased side, the author holds this language:—

"The humerus should then be pressed upward, so that the head of the bone pressing up the coraco-acromial ligament, raises with it the displaced portion of the bone; a firm bandage being now passed over the upper part of the shoulder, crossing the spine of the scapula and the clavicle, is to be carried down on the anterior part of the shoulder between the arm and the chest, to the inner part of the forearm near the elbow, which, (quere, *the elbow?*) should be made to cross exactly in the opposite direction, thus forming a figure of ∞ from the shoulder to the forearm; in this way the humerus is fixed," &c.

To those who have seen the apparatus, this sentence may perhaps convey some idea of the bandage hinted at; but those unfortunates who are intended to receive instruction in the art of dressing fractures of the coracoid process from such a description, deserve no little pity. We have studied the application of bandages with somewhat more attention than is usually devoted to this all-important subject. To comprehend or follow the directions here given surpasses our ability. We cannot even *guess* their meaning.

We have here selected perhaps the strongest instance of incomprehensibility, but there are many other passages in the work, which require much thought, and considerable surgical practice to enable the reader to judge of the probable meaning of the author. Thus, in speaking of the treatment of fractures of the neck of the scapula, the author says—

"The arm should now be bound from the elbow to the shoulder by passing a double headed roller from the forearm near the elbow, bringing either end over the spine of the scapula, where they should cross, and again carrying them down to the chest on the opposite side; by which means the head of the bone is retained in its natural position; the two ends being now brought round to the injured side, and the arm fixed," &c.

We believe that the experienced reader will here discover the *meaning* of the author, though it is certainly left unexpressed in his *words*. If, however, our conjecture be correct, the bandage will form a cross, not on the spine of the scapula, but on the side of the root of the neck.

Fracture of the neck of the humerus, as described by Mr. Hind, is confined to the shaft of the bone above the insertions of the latisimus dorsi and pectoralis major muscles, and does not include the rare case of a separation at the anatomical neck of the bone. In this accident the author endeavours to prove that most surgeons have been misled in supposing that the supra-spinatus muscle has the effect of carrying the lower extremity of the scapular fragment outwards, while it rotates it upward. He thinks that the superior size and strength, and the position of the insertions of the sub-scapularis, the infra-spinatus, and the teres major muscles, fully counteract this tendency of the supra-spinatus. His language leads to the inference, that he maintains this opinion rather from the results of mechanical reasoning than from those of actual observation.

"If we examine the relative sizes of these four muscles, enumerated above as being inserted into the tubercles of the head of the bone, we shall at once perceive how insignificant would be the power of the supra-spinatus compared with the remaining three," &c.

This is one of those questions in the history of fractures, which, in our opinion, cannot be decided on mechanical principles alone. *It is not the relative power of a muscle, measured by the weight which it can raise, that determines its importance as a cause of displacement;* its habitual tone, and its tonic contractility,

are elements of at least equal importance in the calculation, facts which will scarcely be denied, and should not have been forgotten by a student of Sir Charles Bell. But we must wave any argument on this head, least we should be drawn into a wide and ill-surveyed region of physiology; and we, therefore, meet the question on less disputable ground. Any mechanist who will study the structure of the parts will perceive that owing to the relation between the centre of motion in the head of the humerus, and the insertions of these several muscles, the supra-spinatus acts with the whole, or very nearly the whole of its force, in rotating the scapular fragment outward and upward; and that it acts, also, at a mechanical advantage far more than equivalent to the very small part of the power of the sub-scapularis, which opposes this motion. Indeed, the latter muscle scarcely acts at all in opposition to the latter. The really important opponents of the supra-spinatus, are therefore the infra-spinatus and teres major. These are no trifling muscles, and they enjoy moreover nearly as great a mechanical advantage as their antagonist; but it must not be forgotten that the major portion of their force is employed in opposing the normal action of the sub-scapularis as a rotator of the humerus, over which they enjoy some very slight extent of purchase. It is only by a portion of their power, that they oppose the abduction of the upper fragment, and their influence is again somewhat weakened by their partial relaxation consequent upon the slight rotation outward which they produce in consequence of their superiority to the sub-scapularis. It is plain from this statement, that the estimation of the relative effect of the supra-spinatus is a problem of great complexity, even if physiological data are kept out of view. It may be much more readily determined by observation than by calculation.

The accident is not very common, and the number of cases which have fallen under our observation have not probably exceeded six or seven, but we have examined every case with especial reference to this question; of course those more numerous fractures which involve the tendons of the latisimus dorsi and the pectoralis major, are excluded from this group. The result has been that in every case examined, there was primarily a deformity produced by the upper fragment being carried outward and rotated upward; the edge of the fragment being felt through the deltoid, and its position being determined by its relations with the point of the acromion. This deformity has been slight and easily removeable on extending the limb; it is even spontaneously removed during the application of the usual dressings, and its liability to return during the treatment depends very much on the direction of the fracture, for obvious reasons.

In stout and muscular patients, and in cases of severe contusion or ecchymosis of the deltoid, it would probably escape detection. Two of the cases had probably oblique fractures, (for we are never very critical on this point, unless the direction influences the treatment,) and they presented on recovery some limitation of the power of carrying the arm upward and outward to the extreme extent by the action of the deltoid, thus proving the malposition of the fragment after the complete union was accomplished. This permanent deformity is fortunately of little importance, for it is unavoidable in some cases under any plan of treatment hitherto devised.

Under the head of fractures of the humerus, we find a complex jointed carved splint for the forearm and shoulder, adapted to the inside of the limb,

and fitted with a crutch-like axillary extremity, screws, slides, and all the necessary contrivances for extension and counter-extension. This is furnished, as is too customary with English surgeons, with straps instead of bandages to secure it to the limb. We shall not attempt to pronounce upon its merits, for we frankly confess, (whether from prejudice or not let the reader judge,) that dire necessity alone will ever induce us to use a strap and buckle in treating a fracture of any long bone unless, perhaps, the clavicle.

Our limits will not allow us to canvass certain exceptions which might be taken, to a few points in relation to misplacement in fractures of the forearm, but it would be wrong not to bear testimony, on every possible occasion, against the folly so universally prevalent, that induces surgeons to apply a bandage directly to the forearm before applying splints in injuries of this character. We have often asked for a rational explanation of this practice, without effect. It is directly at war with the acknowledged indications in the coaptation of the fragments, and when the object of the whole apparatus is to thrust asunder their extremities, it commences by binding them together. Few plans in surgery are more generally followed; none can be more absurd! With strange inconsistency, Mr. Hind recommends this bandage in fractures of the radius, while he rejects it in fractures of the ulna, and in those of both bones of the forearm!

It is difficult to pass unnoticed the plan of leaving the hand hanging from the ends of the splint in fractures of the radius, as a mean of extension; but here the author stands guarded at all points in the armour of *Achilles*. For the same reason, we pass by those parts of the work which are devoted to such of the fractures of the lower extremities as Mr. Hind has illustrated. In defects of the series have been already enumerated, and we will add but one verbal criticism which might appear trifling, were it not that a disposition to grandiloquy, or a more commendable but undue regard to excessive terseness, is every day introducing technicalities which defeat the chief purpose of professional reasoning—perspicuity. The adjectives "trochanteric" and "intertrochanteric," though each condenses a phrase into a word, will scarcely repay by their brevity the labour of comprehending or pronouncing upon them.

In closing we will merely state, that the histories of the various displacements consequent upon fracture, as given in this work, though minute, and perhaps generally correct, appear to have been digested rather in the dissecting room than in the wards, though the cause of this is not clearly intelligible to us, seeing that Mr. Hind was formerly house-surgeon to Middlesex Hospital. If we have been in some degree severe in our comments on this occasion, it is not because of any assumption in the manner of the author, which is every where modest in the highest degree; but because it is always necessary to call in the aid of a cool judgment, where there is so much to captivate the eye. The work as a specimen of graphic illustration in surgery, is magnificent, and we are sorry to say so little in its commendation. R. C.

XIV. *A Discourse on Self-limited Diseases. Delivered before the Massachusetts Medical Society, at their Annual Meeting, May 27th,* 1835. By JACOB BIGELOW, M. D. Fellow of the Massachusetts Medical Society, and Professor of Materia Medica in Harvard University. Boston, 1835. pp. 48. 8vo.

The author of this discourse has been happy in the selection of his subject, and he has treated it, as might have been anticipated from his known talents, with great ability.

By a self-limited disease, Dr. Bigelow means—

"To express one which receives limits from its own nature, and not from foreign influences; one which, after it has obtained foothold in the system, cannot, in the present state of our knowledge, be eradicated or abridged by art, but to which there is due a certain succession of processes, to be completed in a certain time; which time and processes may vary with the constitution and condition of the patient, and may tend to death, or to recovery, but are not known to be shortened or greatly changed by medical treatment.

"These expressions are not intended to apply to the palliation of diseases; for he who turns a pillow, or administers a seasonable draught of water to a patient, palliates his sufferings; but they apply to the more important consideration of removing diseases themselves through medical means."

The object of Dr. Bigelow is to show the existence of such a class of diseases, and to inquire how far certain individual diseases may be considered as belonging to it.

"The existence of a class of diseases, like those under consideration is, to a certain extent," says Dr. B. "already admittted, both by the profession and the public; and this admission is evinced by the use of certain familiar terms of expression. Thus, when people speak of a 'settled disease,' or of the time of 'the run of a disease,' it implies, on their part, a recognition of the law, that certain diseases regulate their own limits and period of continuance.

"It is difficult," he adds, "to select a perfectly satisfactory or convincing example of a self-limited disease from among the graver morbid affections, because in these affections the solicitude of the practitioner usually leads him to the employment of remedies, in consequence of which the effect of remedies is mixed up with the phenomena of disease, so that the mind has difficulty in separating them. We must therefore seek for our most striking or decided examples among those diseases which are sufficiently mild, not to be thought to require ordinarily the use of remedies, and in which the natural history of the disease may be observed, divested of foreign influences. Such examples are found in the vaccine disease, the chicken pox, and the salivation produced by mercury. These are strictly self-limited diseases, having their own rise, climax, and decline, and I know of no *medical* practice which is able, where it deemed necessary, to divert them from their appropriate course, or hasten their termination."

Dr. B. divides the class of diseases under consideration into three general sub-divisions, which he names—

"1st, the *simple;* in which the disease observes a continuous time, and mostly a definite seat; 2d, the *paroxysmal;* in which the disease having apparently disappeared, returns at its own periods; and 3d, the *metastatic;* in which the disease undergoes metastasis, or spontaneous change of place."

Under the *simple* self-limited diseases Dr. B. classes hooping-cough, measles, scarlet fever, small-pox, erysipelas and typhus fever; under the *paroxysmal,* epilepsy, angina pectoris, mania and melancholy, asthma when it depends upon

emphysema of the lungs, gravel in the kidneys, and the symptoms produced by ascarides of the rectum; under the *metastatic*, certain morbid affections which pass by metastasis from one part of the body to another, for the most part independently of artificial influence.

"Of this kind are certain *cutaneous* affections, more especially some which are chronic and hereditary. Many persons pass a considerable portion of their lives in alternate annoyance from a disease of the skin, and from its vicarious substitute in some internal organ. Others again are afflicted with hæmorrhagic or purulent *discharges*, which at times disappear, only to be succeeded by equally troublesome affections in a different part. *Gonorrhœa* cannot be prevented from occasional metastasis of inflammation to the testes, and *mumps* are sometimes found to undergo the same transition. But perhaps the most remarkable example of a metastatic disease is found in *acute rheumatism*. This morbid affection often begins to discover itself in a limited and comparatively unimportant part of the system. From thence, in grave cases, it travels by successive migrations from joint to joint, and from limb to limb, till it has visited nearly all the great articulations of the body. It also attacks the organs of sense, and the viscera which are essential to life. During the course of these migrations, the attending physician cannot foretel at any given stage, what part will be next invaded by the disease; neither can he protect any part from being thus invaded; nor can he controul the period, during which the disease will reside in any particular part previously to its next metastasis. And in alarming and dangerous cases of this disease, it often happens that the physician can do little more than stand by with his palliatives, in the anxious hope, that the disease will at length pass by another metastatis to some less vital or less important organ."

Such are the views which Dr. Bigelow has developed in his discourse, and he has displayed no little ingenuity in endeavouring to establish them. We are nevertheless not prepared to yield our assent to their entire correctness. That there occur morbid affections, the duration of which, and frequently the extent also, are beyond the controul of our present remedial means, must be admitted, but such affections consist, for the most part, in individual *cases*, not in individual *diseases*. Dr. Bigelow has admitted this, so far as regards asthma, for he arranges in his class of self-limited diseases, that form only which depends on emphysema or the lungs; and a similar restriction might be made in respect to several other affections which he has introduced into the class in question. Such is the case we conceive in relation to *angina pectoris*. This is improperly considered as a disease; it is a term given to a certain group of symptoms, resulting from lesions of the most diversified character, but developing through the sympathies similar morbid manifestations. This group of symptoms when resulting from incurable lesions of the heart, lungs, brain, &c. is certainly incurable, but when caused by gout, seems amenable to remedial means, as will be seen by reference to the interesting article angina pectoris, by our collaborator Dr. Chapman, in the *American Cyclopedia*.

Epilepsy also, when resulting from organic lesions of the brain may be considered as incurable, but when caused by depression of the cranium from injuries, or by simple congestion of the brain, it is often controllable by surgical treatment. Objections might likewise be urged against hooping-cough, erysipelas, and salivation from mercury, being arranged as self-limited diseases, for though this may be true as regards individual cases, it certainly is not so as regards the whole. Nor can we admit that rheumatism is so wholly uncontrollable by

remedies as represented by our author. That some cases are rebellious to our remedies must be admitted, but it appears to us not less true than in very many instances the physician can controul the period during which the disease will reside in a vital organ, and that the practitioner may do much more than "stand by with his palliatives, in the anxious hope, that the disease will at length pass by another metastasis to some less vital or important organ."

It might also, we conceive, be readily shown in relation to some other of the diseases classed by our author among the self-limited, that it is in the power of the practitioner to materially diminish the intensity of the inflammation in the diseased organ, and thus by facilitating its restoration to a normal condition, both ensure that event, and also shorten the duration of the morbid action.

But we are not prepared to enter farther into the description of this subject; though we may hereafter recur to it, for we view it as one of paramount importance, and that the most important results must arise from its investigation. The profession are under deep obligations to Dr. Bigelow for calling their attention to this inquiry, and we strongly recommend his discourse to their consideration. It is true, as is observed by him, that it is "one of the most important desiderata in practical medicine to ascertain, in regard to each doubtful disease, how far its cases are really self-limited, and how far they are controllable by any treatment."

"This question," he adds, "can be satisfactorily settled only by instituting, in a large number of cases which are well identified and nearly similar, a fair experimental comparison of the different active and expectant modes of practice, with their varieties in regard to time, order and degree. This experiment is vast, considering the number of combinations which it must involve, and even much more extensive than a corresponding series of pathological observations; yet every honest and intelligent observer may contribute to it his mite. Opportunities for such observations, and especially for monographs of diseases, are found in the practice of most physicians, yet hospitals and other public charities afford the most appropriate field for instituting them upon a large scale. The aggregate of results, successful and unsuccessful, circumstantially and impartially reported by competent observers, will give us a near approximation to truth, in regard to the diseases of the time and place, in which the experiments are instituted."

We must not be deterred from this investigation by professional or personal reluctance to admit that our art is not or may not be all sufficient, in all cases, to effect a cure. For even in acknowledged self-limited diseases, the practitioner is not to abandon all efforts for the benefit of his patient, and fold his hands and look passively on the progress of a disease which he cannot interrupt.

"The opportunities of doing good," as justly observed by our author, "may be as great in these diseases as in any other; for in treating every disease, there is a right method and a wrong. In the first place, we may save the patient from much harm, not only by forbearing ourselves to afflict him with unnecessary practice, but also by preventing the ill-judged activity of others. For the same reason that we would not suffer him to be shaken in his bed, when rest was considered necessary to him, we should not allow him to be tormented with useless and annoying applications, in a disease of settled destiny. It should be remembered, that all cases are susceptible of errors of commission, as well as of omission, and that by an excessive application of the means of art, we may frustrate the intentions of nature, when they are salutary, or embitter the approach of death when it is inevitable. What practitioner, I would ask, ever rendered

a greater service to mankind, than Ambrose Paré, and his subsequent coadjutors, who introduced into modern surgery the art of healing by the first intention? These men, with vast difficulty, succeeded in convincing the profession, that instead of the old method of treating incised wounds by keeping them open with forcible and painful applications, it was better simply to place the parts securely in their natural situation, and then to let them alone. In the second place, we may do much good by a palliative and preventive course, by alleviating pain, procuring sleep, guarding the diet, regulating the alimentary canal; in fine, by obviating such sufferings as admit of mitigation, and preventing or removing the causes of others which are incidental, but not necessary to the state of the disease. In doing this we must distinguish between the disease itself and the accidents of the disease, for the latter often admit of relief, when the former do not. We should also inquire whether the original cause of the disease or any accessary cause is still operating, and if so, whether it can in any measure be prevented or removed; as for example, when it exists in the habits of life of the patient, in the local atmosphere, or in the presence of any other deleterious agent. Lastly, by a just prognosis, founded on a correct view of the case, we may sustain the patient and his friends during the inevitable course of the disease, and may save them from the pangs of disappointed hope on the one side, or of unnecessary despondency on the other."

Even when we can accomplish comparatively little in the controul of a disease, it becomes more imperative that we should do that little wisely, and well.

"The importance and usefulness of the medical profession," observes Dr. B. "instead of being diminished, will always be elevated exactly in proportion as it understands itself, weighs justly its own powers, and professes simply what it can accomplish. It is no derogation from the importance of our art, that we cannot always controul the events of life and death, or even of health and sickness. The incompetency which we feel in this respect, is shared by almost every man upon whom the great responsibilities of society are devolved. The statesman cannot controul the destinies of nations, nor the military commander the event of battles. The most eloquent pleader may fail to convince the judgment of his hearers, and the most skilful pilot may not be able to weather the storm. Yet it is not the less necessary, that responsible men should study deeply and understandingly the science of their respective vocations. It is not the less important, for the sake of those whose safety it is, and always will be, committed to their charge, that they should look with unbiassed judgment upon the necessary results of inevitable causes. And while an earnest and inquiring solicitude should always be kept alive in regard to the improvement of professional knowledge, it should never be forgotten that knowledge has for its only just and lasting foundation, a rigid, impartial, and inflexible requisition of the truth."

XV. *Thèse soutenue devant le Jury, en Juin,* 1835, *sur la question suivante: Existe-t-il des Agens Thérapeutiques dont l'Effet ne soit observable que sur les Solids ou sur les Fluides?* Par E. Rufz, (de la Martinique,) Docteur en Médecine, &c.—"Réputer presque comme faux tout ce qui n'est que vraisemblable."—Descartes. Paris, 1835. 4to. pp. 60.

Thesis defended before the Jury, in June, 1835, *upon the Question—Does there exist Therapeutic Agents, the Effects of which are observable solely upon the Solids or upon the Fluids?* By E. Rufz, (of Martinique,) M. D. &c.

This is an extremely judicious essay upon a highly interesting subject. We believe that there does not exist at the present day any sect of physicians professing the old humoral notions, that the character, phenomena, and causes of

diseases, namely, are to be explained entirely by certain morbid changes in the fluids; nor do we know of any so absolutely wedded to the doctrine of solidism, as to overlook entirely the modifications which the fluids undergo in various diseased states of the organism. We fear, however, that in the leading pathological systems now in vogue, too little attention is paid to the latter—that, in other words, the fluids are not taken sufficiently into account in our investigations into the nature of morbid phenomena, and the various agents concerned in their production.

This is not, however, the proper occasion to enter, even were we inclined, upon any of the points connected with this important subject. The morbid changes which occur in the fluids are daily arresting more and more the attention of physicians, and the facts which must, before long, be accumulated in relation thereto, cannot fail, we are persuaded, to produce to a certain extent, a modification of existing doctrines.

The therapeutical proposition discussed by M. Rufz, has only an indirect bearing upon the subject just alluded to, and so far as it has any relation to it, notwithstanding the praise we are inclined to bestow upon the essay, the facts and arguments adduced by the author will be esteemed perhaps a refutation of our own views. M. Rufz has very correctly remarked, that an all-important preliminary to any investigation into the morbid states of the fluids and of the effects produced upon them by remedial agents, would be a perfect knowledge of their normal condition. This, however, we certainly are very far from possessing; and hence we admit that any positive conclusions in regard to their pathological states, must always be received with a great deal of caution.

For the satisfaction of our readers we translate the general conclusions at which M. Rufz has arrived after a very full review of the subject under discussion.

1. "Every therapeutic agent acts at the same time upon both the solids and fluids.

2. "There is no therapeutic agent, the effects of which are restricted solely to the fluids or to the solids.

3. "As we may very correctly agree to speak separately of the fluids and of the solids of the human organism, notwithstanding it is impossible in fact to make a real distinction between them, so we may also agree to have in view merely the alteration of the fluids when this is more considerable and evident than the alteration of the solids.

"Thus, in regard to the alkalies, we may say, that as therapeutic agents they act especially upon the urine, without taking into account their action upon the kidneys, considering only the changes which take place in consequence of their employment in the secretion furnished by the latter.

"The same in regard to the solids, passing over what is referable to the afflux of fluids into their tissues, we may speak of their inflammation, of their ulceration, the different alterations of their texture, and of the functions which they perform. But, excepting in this conventional mode of speaking, it is impossible to separate the observable effects of a therapeutic agent upon the fluids from its effects upon the solids.

4. "Conventionally speaking, the effects of therapeutic agents upon the solids are manifested; 1, by the modifications produced in their functions; different disturbances of function; 2, by appreciable modifications produced in their tissues; paleness, flaccidity, injection, &c.; 3, by the actual diseases resulting from the action of those agents, such as inflammation of the skin from a blister; the vaccine pustule, after the introduction of vaccine virus; the ulce-

ration of the mouth, and tremors of the limbs after the employment of mercury.

5. "The effects observed in the fluids are, 1, augmentation of quantity without other change; 2, predominance or diminution of one or more of their constituent elements, with or without change from the normal quantity of the fluids; 3, presence in the fluids of the therapeutic agent without any other modification, the fluids serving only as a vehicle; 4, chemical modifications of the fluids, referable to the therapeutic agent.

6. "Of the three kinds of fluids which we have admitted, (blood, lymph, and chyle, and the secretions,) the first and the last only have presented observable traces of the action of therapeutic agents. We know nothing of their action upon the lymph and chyle.*

"Among the secretions the urine is the one which furnishes to the greatest extent traces of the action of remedial substances.

"With respect to the gaseous and vapoury fluids, and especially the imponderable fluids, which are not appreciable by our senses, such as the nervous and magnetic, the action upon them of therapeutic agents is in no degree observable. In the present state of science in relation to this point there exists nothing but hypothesis—*melius est sistere gradum quam progredi per tenebras.*

7. "In the same conventional sense we may say, that we intend to act upon a certain one of the solids; that is to say, upon the functions of which it is the organ,—as for example upon the heart, with the view of moderating its action; or we may propose to act upon a certain fluid; in other words, upon the secretions, as for example upon the urine, in order to augment its quantity and modify its properties.

8. "Although we may propose to ourselves the foregoing indications, we should keep constantly in mind that they are of importance only so far as the effects of the remedies employed for their fulfilment are confirmed by accurate and repeated observations.

9. "The indications drawn, *a priori*, from mere physiological or chemical data, should be considered only as experiments to which recourse is had in the absence of the positive inductions of experience. In a word, therapeutics as well as pathology must rest entirely upon observation. By observation we do not, however, understand a blind empiricism, which, without taking into account, either the age of the patient, the character of his disease, its degree of intensity, or the period at which the remedy is employed, is content with the affirmation that in such a case a certain therapeutic agent has cured this or that disease.

10. "In order to determine accurately the efficacy of a remedial agent, it is necessary that all the observable circumstances of the disease should have been strictly recorded, noting the negative as well as the positive symptoms, in order that nothing shall be left to memory, and that all precautions are taken to guard against the numerous sources of error. It being at the same time understood that the remedy is to be employed in the simplest possible form, by itself and at regular periods, in order that the problem shall not be complicated in consequence of the action of several agents employed at one and the same time.

11. "After a large number of observations shall have been faithfully collected, we should compare them with each other, analyze them, and draw no inference not sustained by the facts, either in relation to the effects of the remedy, or the duration, termination and symptoms of the disease against which it has been employed. This first series of facts are to be compared with other series of similar facts, collected in the same manner, but from cases in which the disease has been left to its natural progress, or at least in which other therapeutic

* "The different states of the chyle according to the difference of the food are of course not taken into account."

agents have not been employed. Then only will it be possible to decide upon the value of the remedy in question.

12. "When the effects of any remedial agent have been thus established, we should compare the therapeutic with the physiological effects, produced by the same agent, and which have been equally well-established, to ascertain whether the one class is capable of being explained by the other. Thus, presuming that the alkalies cure the gravel, we should investigate the mode in which their effects in this case are to be explained.

"But how cautiously and discreetly is it necessary to proceed in drawing similar deductions! How carefully should we weigh the facts and examine on all sides our explanations, before attempting to generalize; being very certain that from the materials we possess, we are capable of forming abstract propositions; distrusting, especially, universal explanations; questions which have no limits; solutions that nothing can render inaccurate.

"An observation thus extended is not a pure or blind empiricism. It, on the contrary, requires the exact and rigorous exercise of our reasoning faculties upon well authenticated facts; and it repudiates all vague and diffuse reasoning, proceeding from analogy to analogy, and operating only upon the fictions of our imagination. It is to an observation thus extensive and practical, that we owe all that is most important in medical science." D. F. C.

XVI. *Remarks on the Abracadabra of the Nineteenth Century; or on Dr. Samuel Hahnemann's Homœopathic Medicine, with particular reference to Dr. Constantine Hering's "Concise View of the Rise and Progress of Homœopathic Medicine."* By William Leo-Wolf, M. D. New York, 1835. 8vo. pp. 272.

To compose a work of nearly three hundred pages, octavo, for the purpose of refuting the errors of homœopathy, is truly like breaking a fly upon the wheel.

That a tissue of absurdities, such as Hahnemann has attempted to palm upon the world under the sober guise of a rational system of pathology and therapeutics, should find a single advocate among men endowed with common sense, is most unquestionably a matter to be wondered at, and will, no doubt, constitute a curious subject for comment when the history of the medical opinions of the nineteenth century shall hereafter be written. But we doubt very much, whether any attempt to reason the advocates of the system out of their folly, will be productive of much good. Ridicule, and not argument, is the remedy best adapted to their case.

Contradicting, as it does, the best established facts in pathology, and subversive of our every day experience of the effects produced upon the organism by those agents which constitute the materia medica; nevertheless, the very novelty and mysticism, we had almost said the very absurdity of homœopathy, are well calculated to recommend it to minds that delight in whatever is marvellous, inexplicable, and obscure. Like many of the wild hypotheses that have preceded it, the present will have its day, before it is allowed to sink with them into oblivion.

That Hahnemann may be, to a certain extent, a man of talents—that some important truths may be contained in his writings, or that in certain chronic affections the practice he recommends may be even better calculated to effect a cure, than the polypharmaceutic and perturbative modes of treatment pursued by too many physicians, are points we have no desire to dispute. It is to

his system as a whole that we object—we deny the truth of its fundamental principles, and are prepared to prove that in many of its details it contradicts the plainest dictates of common sense—the most positive and best substantiated facts. We doubt whether the few grains of wheat to be culled from the system would compensate for the labour required to search for them amid the mountain of chaff with which they are enveloped.

A late French writer has presented in a few paragraphs an admirable expose of the homœopathic doctrines. We shall offer here a very free translation of some of his remarks.

There are three very distinct propositions embraced in homœopathy. 1. That diseases artificially produced, cause immediately to cease, radically and permanently, those spontaneous diseases which are analogous to them in character. 2. That the homœopathic remedies have the property of inducing at the will of those who know how to employ them, artificial diseases of a very distinct and determinate character. 3. That remedies are efficacious, although attenuated to a degree which appears impossible, (Hahnemann's own words,) to vulgar physicians, whose minds embrace only gross and material ideas.

These propositions comprise the whole of the homœopathic doctrine—a doctrine which, like every other, however wild and ridiculous, is presented by its author as the general expression of results derived from experience. It may be very seriously objected to the homœopathists, that they promise and assert too much. They have, in fact, been so positive as to the accordance of their hypothesis with experience, and the absolute certainty of its results, that it is precisely the test of experience that cause those allusions, with which they have for a period amused all Germany, every day to vanish.

Other medical sectaries have been more wise, or at least more prudent—expecting their system to fail in some cases, they have left ample room for the occurrence of circumstances altogether accidental and independent of their will—they admit freely that the concurrence of certain facts may place bounds to the good effects of their remedial measures; while on the contrary, the homœopathists assert positively that their system is infallible; that the cures produced by it are equally certain, prompt, radical, and durable.

As an example of their therapeutics, Hahnemann assures us, no doubt with the best faith in the world, that a single drop of drosera, in the thirtieth degree of dilution, shook at each degree twenty times, endangered the life of an infant labouring under hooping-cough, to which it was administered; but when the same was only shook twice at each grade of solution, a portion of sugar of the size of a poppy seed moistened with it, was sufficient to obtain an easy and prompt cure of the disease, (Organon, 339.) But this is not all—a person endowed with the greatest sensibility, may take, we are told, several grains of gold leaf without experiencing the least effect in consequence; but from the trituration for one hour of one grain of gold, with one hundred grains of sugar of milk, there results a preparation which has already many virtues. Take one grain of this, and triturate it again for another hour with one hundred grains of the sugar of milk, and thus continue to act, until each grain of the preparation shall contain only a quadrillianth part of a grain of gold, and we have then, says Hahnemann, a remedy in which the medicinal virtue of the gold is so developed, that it is only necessary to take one grain of it, and enclose it in a

bottle, and cause it to be respired for a few minutes by a melancholic in whom the disgust of life has produced a tendency to suicide, and in the course of an hour the patient will he emancipated from the influence of his evil spirit, and experience a renewed desire for living.

They who oppose homœopathy should, instead of saying to its advocates, if a single drop of a remedy diluted to a homœopathic extent is capable of retaining still its virtues, then were we to throw one ounce of bark into the lake of Geneva, this would be sufficient to medicate all the inhabitants of the surrounding country; in place, we say, of presenting such an objection to the doctrine, which Hahnemann has really taken up very seriously, and has shown that the terms of the comparison are inexact, they should introduce the homœopathist to a suicidal monomaniac, or present to him a child affected with hooping-cough, and beg him to cure either immediately and radically by means of his homœopathic fractions. In a word, they should say to him, you who are every hour referring to experience in support of your theory, you have now the opportunity to convince us fully of its truth by the test of experience—we abide the result!

In the work before us, Dr. Wolf has exposed in detail the leading inconsistencies and absurdities of homœopathy—displaying in a very happy manner the folly of many of the propositions it embraces, and treating with just severity the trickery to which the apparent success that has heretofore attended it, is mainly to be attributed. To those who desire to obtain with little trouble a knowledge of the leading peculiarities of the doctrine, the exposition of Dr. Wolf will be peculiarly acceptable.

These remarks relate to the work only so far, however, as it professes to be a critique upon the views of the homœopathists; were we to enter into a review of the medical notions occasionally thrown out by the writer, we fear we should be obliged to treat them with nearly as much severity as we have treated those of Hahnemann. D. F. C.

XVII. *Instituzioni Patologichi di*, Francesco Luigi Fanzago, Professore di Patologia Generale e Speciale, di Medécina Forense, di Publica Igiene Nella R. Universïta' di Padova. Tradotte du Luïgì Michelotti Dottore in Medicina. Seconda Edizione. Two volumes, 12mo. pp. 205—166. Lívorno, 1824. *The Pathological Institutes of* F. L. Fangazo, &c.

Among the several works on general pathology which have been presented to the public within the last twelve or fifteen years, by the physicians of Italy, that of Professor Fanzago holds a very distinguished rank. And we conceive deservedly so. The author has, it is true, confined his remarks almost exclusively to the general consideration of disease, without reference to the particular portion of the organism in which it occurs, or the important modifications in its various phenomena resulting from the structure, functions, and connexions of the organ principally affected; he has nevertheless, notwithstanding the difficulties which are inseparable from the investigation of morbid action in the abstract, and its tendency to the introduction of hypothetical reasoning, presented a series of highly important pathological deductions, many of which are the more interesting from their intimate connexion with physiology, and their direct practical application.

We confess that from the correctness of some of the professor's opinions we widely dissent, and should be inclined to set down others rather as ingenious surmises, than as legitimate inferences from well-established facts. In the general views he has advanced in relation to morbid action we find, however, much more to praise than to condemn.

Professing to base his pathological deductions strictly upon data drawn from the physiology of the human organism, Professor Fanzago, as may be inferred, is in the correct sense of the term a vitalist—with him all morbid phenomena, however diversified in their character, are produced by a derangement of the natural functions of the several organs of the system. He is an advocate likewise of the doctrine which refers to all diseases a local origin—which teaches, in other words, that disease consists primarily in the modification of the vitality of one or more organs; the general symptoms by which they are in certain cases accompanied being dependent upon, or at least kept up by lesions often of very limited extent.

While we consider these points as essential to a correct system of pathological doctrines, we by no means wish to be understood as admitting a recognition of them to be alone an evidence of its accuracy. In the work before us, many, in our opinion, important errors occur in those details the most intimately connected with the points referred to.

It is not our intention on the present occasion to offer any thing farther than a general notice of the work of Professor Fanzago; to enter into an examination of his doctrines, even of those which may be considered as peculiar to himself, would require more time and space than we can at present afford. We recommend the work, however, to our readers as a very useful and interesting manual of general pathology, and one calculated, in our opinion, to excite them to study the more recent works of the Italian physicians, which, considering their real value, are certainly too much neglected by the members of our profession in this country. D. F. C.

XVIII. *Popular Physiology; being a familiar Explanation of the most interesting facts connected with the Structure and Functions of Animals, and particularly of Man, adapted for general readers.* By Percival B. Lord, M. B., M. R., C. S. of the Bombay Medical Establishment. Published under the direction of the Committee of General Literature and Education, appointed by the Society for promoting Christian knowledge. London, 1834. 12mo. pp. 500.

We view with no little pleasure each new attempt that is made to render popular the study of physiology. In all that relates to his own organization and the vital laws to which it is subjected, every member of the human family has a deep and abiding interest—many of the most pernicious errors and customs of society, in relation to education, dress, occupation, food and drink, and the location and construction of dwellings, as well as to the opinions entertained in regard to the means of preventing and curing diseases, have their rise mainly in an ignorance of the various functions of the living system, the influence which they reciprocally exert upon each other, and the manner in which they are acted upon by external agents. It is at least certain that the errors and customs to which we allude can only be effectually removed, by

causing the study of physiology to enter as an essential item into every scheme of general education. We are indeed somewhat surprised that so important a branch of natural philosophy should have been so long allowed to remain the sole property of the medical profession.

The system of popular physiology of Mr. Lord is a very interesting and excellent manual of the science, and well adapted for the purpose for which it is professedly published, the instruction, namely, of the general reader.

"To investigate the laws of animated nature," remarks the author in his second chapter; "to trace the plant from the seed, or the animal from the ovum; to observe them developing the qualities, or performing the duties to which they have been destined by an all-wise Creator; to inquire into the beautiful structure and arrangement of organs by which they are enabled to 'live and have their being;' to notice their rise, progress, and gradual decay, from the time that, radiant with youth and beauty, they spring up to life and the light of day, until, exhausted and worn out, their appointed time being come, they again return to the earth 'whence they were taken.' Such are the interesting, the all-absorbing objects of a science that has hitherto been considered too dull and abstract to engage the attention of general readers, too theoretical and inconclusive to extend beyond the schools of medical philosophy.

"That in the pursuit of physiological knowledge there are many difficulties to be overcome, it is not attempted to deny. 'The Gods,' says the old poet, 'have placed labour and toil in the way leading to the Elysian fields.' But many of these difficulties arise from the subject being enveloped in technical language, and interspersed with technical details, interesting only to the profession for which works on this subject have hitherto been composed. The habit, too, of presupposing a knowledge of anatomy, which general readers cannot be supposed to possess, has increased the obstacles that lay in the way of this proper study of mankind."

In the present little work, an attempt has been made to obviate some of the above difficulties. The prominent facts of the science are stated, as far as is practicable in familiar language. Anatomical details are introduced to the extent necessary for understanding the physiological matters under consideration, and well executed wood-cuts are resorted to whenever they can be made an efficient mode of explanation. D. F. C.

XIX. *Essays and Lectures on Medical Subjects.* By John P. Harrison, M. D. Professor of Materia Medica in the Cincinnati College. Philadelphia, 1835. 12mo. pp. 192.

These essays and lectures are evidently the productions of an active and vigorous mind—a mind nevertheless, that we should shrewdly suspect, is a *little* more fond of general declamation than of a course of close inductive reasoning; a mind we fear more ready to join in the sneer at modern theories in physiology and medicine as too fanciful and hypothetical, than to sit down industriously to their investigation, and to test their accordance with the facts and arguments adduced in their support. It is this perhaps which has lead the author not unfrequently into the error of attributing absurdities to doctrines to which they have no other relation, excepting that created by his own imagination, and of setting down as opposed by experience that which in fact, all experience confessedly establishes.

With all their faults, the essays and lectures before us contain nevertheless many excellent things, and if they be not marked by great originality, they at least exhibit no little vigour of thought.

We regret, however, that more attention had not been paid to the correctness of the press—numerous typographical errors occur, often under circumstances where they show to the greatest disadvantage in a professional work, namely, in technical terms and proper names. Thus homœopathy is invariably spelled homæopathy, and it is said to be derived from the Greek ὁμοιον *alike*, and παθος *disease;* spiral marrow occurs for spinal marrow; Bouilland for Bouillaud, &c. &c. In a work like the present, correctness, if not beauty of typography, was at least to be expected. D. F. C.

XX. *A Popular Essay on the value and present condition of the practice of Vaccination; embracing a consideration of all the points important to be understood by the heads of Families, and particularly of Revaccination.* By a Physician. New York, 1835. 8vo. pp. 38.

The present pamphlet appears to have been written for the very laudable and important purpose of placing before the general reader the leading facts, in relation to the cow pox, which, when carefully weighed, must have a tendency to confirm, rather than diminish the confidence of every reflecting physician in the protective powers of vaccination.

For the accomplishment of this object, the essay is well adapted, and we should like to see it extensively circulated among the heads of families. We know of none on the same subject in which we find so little to object to, either in relation to what is advanced as fact, or in reference to the general conclusions of the author. Even on the subject of revaccination we are not inclined to dispute with him as to the correctness of his views, provided, always the revaccination is not resorted to under the supposition that the protective influence of the first operation becomes diminished, and finally lost with the lapse of years, but solely as the only certain means of testing whether the patient's system is fully protected, when we are ignorant of the facts connected with the first vaccination. D. F. C.

XXI. *A Manual of Aphorisms in Chemistry; the Chemico-Pharmaceutical Preparations and Decompositions of the London Pharmacopœia, and Toxicology, Comprehending the Symptoms, Diagnosis, Morbid Appearances, Antidotes, Treatment, and Methods of Detecting Poisons, &c.* By Robert Venables, A. M., M. B. Oxon. Physician to the Fore Street Dispensary; Lecturer on the Theory and Practice of Physic, and on Medical Jurisprudence and Toxicology. London, 1834. p. 251. 12mo.

We have been much pleased with this little work, which comprises in a small compass a great variety of information of the highest value to the medical chemist. By presenting his doctrines and facts in the form of aphorisms, and thus avoiding useless words and unimportant details, the author has been enabled

not only to notice the most valuable chemical agents, explain their mutual actions upon each other, and the nature of the resulting products, but also to give the rationale of the most important chemical formulæ of the pharmacopœia, as well as to present a well arranged synopsis of the present state of knowledge as regards the verification and detection of poisons. Although several errors are to be detected, they are generally of so trifling and unimportant a character, as not to detract from the general value of the work, which we can with confidence recommend to students as one of the best compends on medical chemistry we have met with.

One of its peculiar merits is, that no process is described without an explanation of every step of it being given. The advantages of the plan adopted by the author will, however, be better appreciated by giving an example:—

"*Aph.* 26. Aluminum may be procured by decomposing chloride of aluminum by potassium at a moderate temperature. The reäction is so violent, that it is attended with intense heat and light, and must therefore be performed in a platinum crucible, though it may be executed in one of porcelain.

"*Rationale.*—When the potassium is brought in contact with the chloride of aluminum, the chloride is decomposed, and its chlorine unites with the potassium, forming chloride of potassium, and the pure aluminum is set at liberty. The quantities must be accurately adjusted, both to prevent the sublimation of chloride of aluminum during the process, or the generation of an alkaline solution, when the product is put into water. When quite cool, the whole is put into water, by which the saline matter is dissolved, and hydrogen in small quantity, but of an offensive odour, is disengaged. A gray powder separates, which, after being well washed in cold water, is pure aluminum.

"27. Aluminum has the following characters:—

"*a.* It is a gray powder, which in the sun-shine appears to consist of minute metallic scales, very like platinum.

"*b.* Its metallic lustre is rendered very evident by pressure in an agate mortar, or on steel.

"*c.* In fusion it is a conductor of electricity, but in powder not.

"*d.* It requires for fusion a temperature higher than that required for the liquification of cast iron.

"*e.* It takes fire in the open air, when heated to redness, and alumina is formed of considerable hardness.

"*f.* It burns when heated to redness, in pure oxygen, with a most vivid light on the extrication of intense heat, and the product is a sub-vitrified alumina of a yellowish colour.

"*g.* It is not affected by concentrated sulphuric or nitric acids at common temperatures; but is dissolved in sulphuric by aid of heat, and sulphurous acid is given off.

"*h.* In diluted acids it dissolves, with the extrication of hydrogen gas.

"*i.* Dilute solutions of ammonia or potass produce the same effects, and render large portions soluble," &c. &c.

In the second division, which treats of chemico-pharmaceutical preparations and decompositions, the same method is pursued, the process being first given, followed by its rationale and other useful details. A companion to our National Pharmacopœia on this plan, with the addition of observations on the different formulæ, and the reasons for adopting them, would be of extreme advantage to pharmaceutical students, and in fact should always accompany works of this character. As it now stands, too many of our druggists, from a want of che-

mical knowledge, are unable to appreciate the different steps of a complicated process, and hence are unable to account for, or remedy any anomalous or contravening phenomena that may present themselves.

The third division on toxicology is, perhaps, the most valuable portion of the work, and should command the closest attention, especially those aphorisms relating to antidotes and the detection of arsenic, in which the author has wisely given the preference to the most simple and readily executed processes, rather than those of a more complex character. R. E. G.

XXII. *Lehrbuch der Geburtskunde. Ein Leitfaden bei Akademischen Vorlesungen und bei dene studium des Faches.* Von Dr. Dietr. Wilk. Keirir. Busch, Königl. Preuss. Medicinalrathe, ord. Professor der Medicin an der Königl. Friedrick-Wilhelms-Universität zu Berlin, Director des Klinischen Instituts für Geburtshülfe, Mehrerer gelehrten Gesellschaften Mitgliede. Zweite Auflage. Marburg, 1833. pp. 784.

Manual of Obstetrics. A Guide to Academical Lectures, and to the Study of the Subject. By Dietr. Wilk. Keirir. Busch, &c. &c. Professor of Medicine to the Royal Frederick William University at Berlin, &c. &c. Second edition. Marburg, 1833. pp. 784.

Although the medical, and other scientific institutions of Germany are unknown, in their details, to the large mass of our community, enough of their general character has reached this country to cause them to be highly appreciated. There is perhaps no country, in which such facilities are afforded for the acquisition of scientific and literary information, and none in which the object is pursued with more real enthusiasm. A good deal of this is owing to the competition, which is permitted amongst the teachers, even in the largest Universities, but more to the habits of patient and laborious research, which are so characteristic of the German student.

In the department of medicine—in all its branches—Germany has always had distinguished investigators, some of whose names are familiar to every medical student. If, indeed, we cast our eye over the catalogue of medical works, which appeared during the last century, we will be surprised to discover the vast proportion, which the emanations from the German press have over those of every other country. To the branch of obstetrics not less attention has been paid than to the others; whilst their numerous institutions have enabled them to collect many statistical and other facts, which have largely enhanced our acquaintance with the subject. Weikmann, Walther, Wagner,—the Steins, Stark, Von Siebold, Schmitt, Schmidt, Ritgen, Roederer, Osiander, D'Outrepont, Naegele, Martens, Mende, Lobstein, Jörg, Klein, Horn, Hagen, Von Froriep, Ebermaier, Carus, Bössel, and the author of the work before us, are well-known amongst their countrymen—and many of them abroad—for their researches in this direction, and for their published contributions to obstetrical science.

The literature, by the way, of this department of medicine, is probably far more extensive than is suspected. Dr. Busch has collected the titles of 2,475 works; some of which, however, relate as much to other branches of the science as to this; but, on the other hand, the list is by no means complete.

In his introduction, the author expatiates, at some length, on the importance of obstetrics—at the present day, perhaps, an unnecessary occupation of his, and the reader's time. Although, until of comparatively late years, left altogether to the uninstructed, it is now justly regarded as one of the most interesting and valuable departments of our science. In referring to the value of lying-in establishments, both for learning and improving the art of midwifery, the author gives the following list of the different institutions of the kind in the various parts of Germany, with the annual number of births, and the present obstetrical directors,—including, of course, the most celebrated existing practical obstetricians of his country.

Clinical Obstetrical Institutions at—	Number of Births annually about—	Present Directors.
Berlin, (Charité)	300	Kluge.
(University)	270	Busch.
Bonn	130	Stein.
Breslau	180	Betschler.
Dresden	270	Haase.
Erlangen	20	Bayer.
Giessen	100	Retgen.
Göttingen	150	Mende.
Greifswald	36	Berndt.
Halle	50	Niemeger.
Heidelberg	150	Nägele.
Jena	50	Stark and Walch.
Königsberg	50	Henne.
Landshut	50	Alsamer.
Leipzig	100	Jörg.
Marburg	100	Von Siebold.
Müneken	150	Weisbrod.
Strassburg	70	Lobstein.
Tübingen	70	Rieeke.
Vienna, *a.*	2200	Klein.
b.	60	
Würzburg	150	D'Outrepont.

Making in the whole, 4,700 children annually born in the chief Lying-in Institutions of Germany.

The fact of the work before us having passed into a second edition, exhibits the estimation in which it is held in Germany. It would not, however, we think, meet with equal favour in this country; and this, mainly, in consequence of the slight attention which Dr. Busch has given to the physiology of the pregnant state, and to those deeply interesting topics of fœtal anatomy and physiology, which have lately agitated the medical world. There is scarcely, indeed, a point, on which a difference of opinion exists, to which the author has directed his readers attention.

The work is divided into four sections, which are preceded by an introduction relating to the history of obstetrics, of which we cannot say much. The first section is on the "Propædeutics* of Obstetrics," comprising a brief account

* Preliminary or preparatory instruction; from προ, "before," and παιδωτικος, "belonging to instruction;"—itself from παις, "a child."—R. D.

of the female and her reproductive organs; the second is on the "Physiology and Dietetics of Obstetrics;" the third on the "Pathology and Therapeutics of Obstetrics," and the last on the "Zechnies of Obstetrics, or the Doctrine of Obstetrical Operations."

At the termination of the volume the author has given—under the head of *Literatur*, the titles of the various works relating to obstetrical science—directly or indirectly. These, as we before remarked, amount to nearly 2,500 volumes. R. D.

XXIII. *Observations on the Causes and Treatment of Ulcerous Diseases of the Leg.* By J. C. Spender, Member of the Royal College of Surgeons in London. 8mo. London, 1835. pp. 210.

We are much pleased with this little volume on several accounts. It is written in a clear and unpretending style; the few errors of grammatical construction which we notice in its pages, do not materially obscure the meaning of its author, the repetitions which occur with sufficient frequency to prove in some degree fatiguing, are fairly attributable to the obvious fact that the treatise has been written *currente calamo*, and to this circumstance it owes excellencies which far outweigh the defects just mentioned.

The work is divided into three principal chapters, on the causes and classification of ulcers, on the general principles of treatment, and on the application of these general principles. To these is added a short chapter on the propriety and safety of healing ulcers of the leg. Waiving all notice of the last chapter, which in its nature resembles an appendix, and contains nothing that demands special attention, we may safely state that few treatises have fallen under our observation in which the arrangement of the subject and the justice of the deductions are more strictly in accordance with the rules of logic. If the arguments of Mr. Spender are vulnerable, it is his data, and not his reasoning, that must be made the object of attack. His principal propositions are extremely simple; they amount, in few words, to these: 1st. The dependent position of the inferior extremity is not the cause of the frequency of ulcers of the leg. 2d. The intractable character of such ulcers is due to a diseased condition of the extremities, which very generally consists in, or arises from a varicose condition of the veins, and not to the simple pressure of the superincumbent column of blood. 3d. The most rational plan of local treatment for ulcers of the leg, is, in a vast majority of cases, to imitate nature in the cure of slight injuries, by causing the part to become covered with an artificial scab. 4th. The most correct method of relieving the diseased condition of the member, which is the cause of the ulceration, is the application of methodical pressure to the limb, commencing at the toes and extending to the knee or thigh. 5th. The exceptions to the two last rules are very rare.

All that is positively new in this treatise, is the peculiar method of forming the artificial scab, and the extension of the treatment by pressure to cases in which its application has been generally condemned, and the use of greater force than is usually considered warrantable;—but we are not one of those who value the merit of all contributions to surgery according to their novelty alone.

The author is a partisan, and we cannot help suspecting that he has given

rather too ready credence to the almost universal success of his method of treatment, in consequence of his disgust at the aimless and irrational plans which have been pursued in most of the cases brought before him; and his observation has extended to hundreds of cases. To judge from the picture he presents, it would appear that in London, almost every ulcer of the leg, when the patient is unable to remain for months in a recumbent posture, is bundled up in a poultice, to be renewed every night and morning, uselessly and hopelessly for years! for rest and position are there held by most surgeons not as mere adjuvants, but as fundamental points in the treatment. Action and reäction are equal, and it is scarcely surprising, under such circumstances, (always supposing that the facts are not too highly coloured,) that Mr. Spender should be led to reject entirely, and even to condemn all appeals to rest and position. We have known a patient with a simple fracture of the middle of the shaft of the os humeri, recommended to enter one of our large hospitals by a respectable practitioner, whose first order was to envelope the limb in a bread and milk poultice! but this is, with us, a mode of treatment which certainly would not meet with general approval; the injurious effects of continued poulticing are well understood, and bad consequences from the practice are but seldom witnessed.

The grounds on which the author rests his first proposition are these:—1st. It is unreasonable to suppose that nature would place parts in such a position as to render them incapable of performing their proper functions without rendering themselves subject to diseased action, and moreover, if the dependent position of a leg were indeed the cause of ulceration, all legs would be ulcerated, *because all legs are dependent*, &c. These grounds are quite sufficient to show that the location of ulcers of the lower extremities is not the only, or immediate cause of the disease. 2d. A tabular view of one hundred cases of ulcers of the leg, shows that in seventy-nine cases the veins of the limb were varicose, hence the varicose condition is one of the principal causes of the frequency of these ulcerations, &c. This position is very fully illustrated in the treatise, and it is clearly proved that Mr. B. Bell, Sir E. Home, and other writers on ulcers, who admit the varicose ulcer as one of the species in their arrangements, have not attached enough importance to it. We think Mr. Spender is fully justified in regarding ulcers of the leg unattended by diseased veins, as exceptions to a general rule; but he strains his argument a little when he employs the fact just mentioned, to prove that the position of the limb is of no importance as a cause of ulceration. The question, whether the dependency of the member is one among the causes of the varicosity, still remains open. This question involves both mechanical and physiological data, not generally understood, and is far too complex to be argued on the present occasion; but the lights of experience so fully determine the fact, that the position of parts have a most important bearing on their physiological actions. The pressure of the column of blood on the coats of the veins of the inferior extremities is vastly greater than that which operates on the vessels of other portions of the body. Now, although it is demonstrable that nature has provided these veins with superior powers of resistance on this very account, it must not be forgotten that the customs, vices, and follies that follow in the wake of civilization, are perpetually thwarting the purposes of nature, whose plans moreover are continually disarranged by accidental

forces. A moderately tight garter on the leg will occasion greater distention of the veins, than will a similar ligature on the arm, and for this plain reason; in the existing state of society, the veins of the lower extremity are proportionally weaker than those of the upper. It would be extremely difficult for Mr. Spender to prove that the dependent position of the limb is not among the causes of varicosity, and hence of ulceration. This error in a postulate, is the more to be regretted, because all the practical inferences which follow it might have been supported on less debateable grounds. On the second proposition little need be added; but it is worthy of remark, that Mr. Spender's observations furnish a very large proportion of irritable ulcers among those which result from varicosity.

In speaking of the advantages resulting from defending ulcerated surfaces by means of artificial scabs, he offers many interesting remarks on this important plan of treatment, and proves that it is often made available by the aid of methodical pressure, in cases in which a natural scab is sometimes productive of mischief.

The author condemns the practice of applying stimulating dressings to ulcers, except in a few rare cases; and it is remarkable that the exceptions include a very fair proportion of irritable ulcers; while not a word is said of narcotic ointments, which we always have considered and still continue to consider, indispensable adjuvants in the management of many cases. He likewise condemns the *general application* of adhesive strips to indolent ulcers, thinking them too partial in their action; and he dwells with cogency upon the impropriety of the custom of washing the sore with water, or dilute alcohol at almost every dressing, as is so commonly practised in all hospitals. His reasonings on this subject are sufficiently at variance with the results of cold irrigation in wounds, as recently reported in Paris. His main dependance, in a great majority of cases, is a peculiar ointment of chalk and cerate; the former in such proportions as to saturate the unction, so that when the latter is absorbed by the bandages, a portion of the chalk is left adhering to the skin around the ulcer, and also to its margin, where it hardens in combination with a portion of the pus. As the ulcer is never washed, this crust increases with each dressing, until the face of the sore is covered, and the cicatrization advances very rapidly beneath. This mode of preparing the chalk is said to be greatly preferable to the washes, or the dusting with the dry carbonate, in common use before; for it forms a more level and regular crust, and by collecting very gradually, is not liable to create mechanical irritation.

Whenever the veins are varicose, the chalk ointment is invariably aided by the methodical bandages, applied in the manner usual with us. The irritability of the ulcer is never made an objection to the bandage, but when pressure is very painful in the first instance, the roller is carried up with great firmness to the lower angle of the ulcer, and continued lightly over the sore and the superior part of the limb. Under this treatment the painfulness of the part is rapidly diminished, and a short time suffices to enable it to bear the treatment recommended in indolent ulcer.

The force employed by Mr. Spender in the application of the bandage is startling! He usually draws each turn with as much strength as his arm can conveniently exert, and in some instances he employs *nearly all his power!*

We presume he is not an athlete; for assuredly most surgeons in following

this plan to the letter, would produce gangrene of the toes. The most important point in the treatment recommended, is the inculcation of the propriety of exercise during the treatment. *The patient is never permitted to remain in bed.* There can be no doubt that an ulcer thus healed, would be more effectively and permanently, though more slowly healed than when treated with the limb in an elevated position.

The practicability of the cure depends entirely upon the accuracy and permanency with which the roller is secured. Unfortunately, the power of applying a bandage with skill, is the rarest accomplishment of surgeons. To judge from the concluding pages of this work, it appears that when the treatment is completely successful, the roller must be worn permanently in many cases as a preventive measure; but even this necessity may well be borne by those unfortunates whose condition is too often hopeless under the ordinary attempts at cure.

Tabular results of success the author has not given us, but the following statement of one hundred cases possesses some interest, and we therefore extract it.

Varicose, 79, of which were simple, 41; very irritable, 27; very indolent, 11.
Non-varicose, 21, " " 15; " 4; " 2.
Of the whole number, 68 were female; 32 males.
Of the varicose, 59 " 20 "
Of the non-varicose, 9, " 12 "

The work is replete with valuable thoughts and observations; it treats of a much neglected, though most important subject, and it cannot be perused without advantage. R. C.

XXIV. *Mémoire sur les Communication des Vaisseaux Lymphatiques avec les Veines.* Par V. Fohmann, Professeur a l'Université de Liége. Liége, 1832. pp. 21. 4to.

When noticing in our number preceding the last, (p. 174,) the discovery by Professor Fohmann, of the existence of absorbents in the placenta and umbilical cord, we expressed our intention of giving an account, at no very remote period, of some of the other researches of the same distinguished anatomist, and we are happy to be able, on the present occasion, to execute that intention. We are aware that there may be some of our readers to whom the discoveries of Professor F. are now no novelty, as several years have elapsed since they were first announced; nevertheless, as no detail of them has yet been laid before the profession in this country, it appears to us not to be too late to undertake that task.

The researches, an account of which is contained in the memoir under notice, are the results of twelve years labour devoted to the subject, and the author states that he has represented the facts as presented to him in nature, without allowing his judgment to be influenced by the prevailing doctrines on the subject. He, therefore, thinks himself entitled to express the wish that all those who may examine his labours will equally free themselves from the influence of ancient doctrines; as for example, the notion that the lymphatics arise in the

parenchyma of the organs by such delicate radicles as not to be perceptible to the senses, and consequently not to be susceptible of demonstration. That they would farther disembarrass themselves of the notion, that the cellular tissue is so profusely distributed through the human body, that if all the other parts which compose its structure were removed, it would represent the entire form. That they will renounce also the opinion that this same cellular tissue serves as the common and sole bond of union to all the other systems.

"No one," says M. F. "has as yet satisfactoriiy demonstrated the cellular tissue; and I can prove that the parts which in man are considered to be formed entirely of this tissue, as for example, the greater portion of the umbilical cord, the transparent cornea and the conjunctiva, the serous membranes and the internal tunic of the vessels, consist almost exclusively, or rather entirely, of a net-work of lymphatic vessels; and that in general every tissue which cannot be coloured by successful injections with fine materials, and which cannot be classed in the osseous, cartilaginous, fibrous, nervous muscular, or epidermoid systems, is not cellular tissue, but a net-work of lymphatic vessels. This disposition is shown by injecting with mercury the ultimate distribution of the lymphatics in the organs; the mass uncoloured by the injection of the blood-vessels is transformed under our eyes into plexuses and net-works of absorbent vessels."

Previously to entering upon the consideration of the researches of Professor Fohmann, it is necessary to advert to the fact, that when these researches were instituted, it was the prevalent opinion among anatomists, that the only communication between the lymphatics and veins was by the large trunks of the former, which terminate in the subclavians. It is true that the existence of a communication between the absorbent vessels and veins in the lymphatic glands had been shown by the observations of the two Meckel's, (grandfather and father,) of Coiter, Abernethy, and Vrolik; but little confidence was in general given to those observations, and even the circumstance of mercury injected into the afferent vessels of a gland, flowing out of the veins of that organ, was attributed to a rupture of the tunics of these vessels, and not to their anastomoses.

Men of the highest authority, as Haller, Hewson, Portal, Mascagni, Sœmmering, and others, denied the existence of any communication between the lymphatics and veins, except by the known trunks in the clavicular regions. Sœmmering especially, was very positive on this point. "No one has yet clearly demonstrated," says he "by a preparation, an absorbent vessel emptying into a vein. To distend a vein with air, or to fill it with mercury or wax by a lymphatic remote from such vein, proves nothing. It is necessary to represent the absorbent vessel entirely isolated, and to clearly demonstrate its termination in the vein, in order to destroy all suspicion that these foreign substances passed into it through venous branches which had been cut. I durst then assert, without fear of contradiction, that this demonstration has never been, and never can be be made; it is consequently an error to believe in the pretended insertions of lymphatic vessels into the veins."

As the proof required by Sœmmering had not been furnished, the assertion of this anatomist was concurred in almost universally.

Such was the prevalent doctrine, when in the spring of 1820, Professor F. had an opportunity of dissecting a sea-calf. On examining the viscera, he perceived chyle in the lymphatics of the mesentery; this circumstance appeared to him to be favourable for the introduction of mercury into these vessels; he

consequently undertook to inject them, with the object of making a preparation, in which the glands should be united in one mass or pancreas of Aselli. He was surprised to find that the mercury which he had poured through a great number of afferent vessels into the gland, and which had very regularly filled that organ, did not pass into the efferent vessels, but flowed solely into the veins of the mesentery. Having proceeded to the injection with extreme precaution, he had no reason to suspect that there had been any rupture, and he therefore attributed this phenomenon to the anastomosis of the lymphatics and veins in the gland. This was, however, only a single observation, but he resolved to thoroughly investigate the subject, and he accordingly devoted himself to more extended researches, which he instituted not only on the human subject, but also on a great variety of animals.

He often observed in his experiments, as well on man as on animals, that mercury injected by the afferent vessels into the glands, flowed into the veins of these organs as readily as into the efferent vessels. He was also frequently unable to discover any lymphatic efferent vessels in certain glands of dogs, especially in those of the fore left extremity, a circumstance which he had previously remarked in the sea-calf already spoken of, as well as in a second individual of the same species. In a third experiment upon one of these animals, he finally observed in this gland not only efferent vessels, but also the transfusion of mercury into the veins. He bestowed particular attention to the glands which appeared deprived of efferent vessels; resorted to every means of discovering these vessels; he removed the gland with the surrounding parts, and having placed it upon a porcelain plate, tied the veins through which the mercury flowed out of the gland; he then injected anew with mercury the three or four afferent vascular trunks which passed into the gland, in the hope of introducing the metal into the efferent vessels if they really existed; but all his trials were unsuccessful. The glands and veins were filled with mercury, and ultimately ruptured, without any traces of efferent vessels being discovered.

"Why are not these vessels perceptible," asks our author, "if they really exist? Why can we not distinguish these efferent vessels, whose size is much greater than that of the afferent, which run into the glands, and whilst these afferent vessels, although more slender, do not escape the sight of the observer?" "I attach," he adds, "much importance to these glands, because they furnish demonstrative evidence, though not the proof required by Sœmmering, that anastomoses between the lymphatics and veins exist in them, for being deprived of efferent vessels, the chyle and the lymph which they receive, must naturally be conveyed away by other vessels, and this is, and can only be effected by the veins." p. 5.

To furnish a conclusive proof of the communications between the lymphatics and veins in the glands, Professor F. adduces some experiments which he made on the mesenteric glands of horses. After having ascertained that mercury injected through the afferent vessels into the glands of these animals, flowed out through the veins, as well as by the efferent vessels, he tied in some horses just killed, and in which the lacteals were still full of chyle, the arterial ramifications and the small venous tunics of several glands of the mesentery at some distance from this organ, having previously emptied them by pressure as completely as possible of blood. He then replaced the parts in the abdominal cavity, which was still warm, where they continued their peristaltic movement

like the other parts of the intestinal canal; and subsequently the fold of intestine from the abdomen, he found in the venous trunks of several of the glands which he had surrounded with ligatures, a mixture resembling more chyle than blood, and which, in his opinion, consisted of the little blood remaining in them, and chyle which had been poured into them by the lymphatic ramifications. The horse is particularly suited for these experiments, because among the scattered glands in a large mesentery without fat, there are some, the blood-vessels of which may be easily tied in the manner pointed out. As the glands were not injured in these experiments, and the progressive movement of the chyle through these organs was not interrupted, the appearance of this fluid in the veins of these organs cannot be attributed to a rupture in the glands, but must with greater reason be considered as a necessary consequence of a communication between these vessels, and of the activity of the lymphatics which continues, as is known, some time after the cessation of the peristaltic action, and even some time after death.

As connected with these observations, Professor F. alludes to the circumstance, that in horses in which the absorption of chyle has commenced, following recent digestion, blood drawn from the trunk of the vena porta has always milky striæ, whilst the blood of the veins on this side of the mesenteric glands does not present this mixture. To be certain of this fact, Professor F. applied on this side of these glands, in animals recently killed, ligatures around the vessels and a part of the intestines, so that the blood could not retrograde in the branches, and then collected the blood beyond and within the ligatures; the chyle was perceptible only beyond the mesenteric glands. This fact has also been observed by Tiedemann and Gmelin.

After all, however, it is only by induction that Professor F. has shown the existence of numerous anastomoses between the lymphatics and veins in man and the mammifera; but he has been fortunate enough to meet with in birds the proof required by Sœmmering. He has discovered in several birds of prey, small absorbent trunks, emptying into veins at a great distance from the clavicular regions, as at the coccygis and anal region, and where their union is clearly visible.

From these experiments, Professor F. infers in opposition to the previously entertained doctrine, that the communication between the lymphatic and venous systems, is not restricted to the large trunks in the clavicular regions, but that it comprises also the anastomoses of the most slender radicles in different parts of the body; and in harmony with these arrangements, we find that the thoracic ducts are small relatively to the large mass of lymphatics before their entrance into the absorbent glands.

This disposition our author points out as also in harmony with the well-known physiological experiment, that the injection into the veins of the mildest substances, as the blood of another individual of the same species, produces the most injurious effects in the whole system, and often even causes death; whilst this same operation is entirely free from danger when the injection is slowly made.

"As it is not improbable," says our author, "that the introduction of a large quantity of chyle and lymph, when these fluids are not elaborated to a greater

degree than we find them in the thoracic duct, would produce similar effects to those occasioned by other substances, we admire in this frequent communication of the lymphatics and veins, a wise arrangement of nature, by which it prevents those dangers by gradually mixing these fluids with the blood, through the intervention of the assimilating glands. Their mixture with the blood is farther promoted by their passage from the most delicate venous ramifications into insensibly larger branches."

Such is a summary of the facts furnished by the researches of Professor Fohmann; the remainder of his memoir is devoted to the consideration of the recent labours of anatomists and physiologists, which are confirmatory of his observations, and to a very severe, and we suspect just criticism, of the pretended discoveries of Lippi. We shall not follow our author through this part of his work, but there are a few points which ought not to be passed over unnoticed.

As confirmatory of the observations of Professor F. it may be well to state, that his experiments on man, as well as most of those on animals, have been repeated by M. Alexander Lauth, of Strasburg, with results perfectly identical with those of our author.

It is well also to state, that whilst Professor F. is in accordance with Meckel, (grandfather,) and Abernethy, as regards a communication existing between the veins and lymphatics in the glands, he is entirely opposed to them, as to the *mode* in which these communications are established.

Abernethy and Meckel, (grandfather,) state that there arise in the parietes of the glands, absorbent vessels and veins with open orifices; an assertion which Professor F. considers as destitute of foundation.

"Communications of lymphatics with veins cannot take place," says our author, "in any other manner than that which is observed to exist between the large lymphatic trunks and the subclavian veins; that is, that a lymphatic unites itself to a vein, and is so inserted into it, that the two vessels form but a single one; the blood-vessel alone continues its course, and conveys to the heart, besides the blood yielded to it by the arteries, the fluid which the lymphatic has poured into it. Thus, as we have already said, and as M. Lauth has justly remarked, a vessel arising independently of the arteries, and in which consequently the blood of the arteries cannot flow, and which unites itself in its course to veins, cannot be considered as a venous radicle, but must be looked upon as a lymphatic.

"No one has yet demonstrated the orifices of the fine ramifications or radicles of vessels. My experiments show that these vessels have no such terminations. The lymphatics as well as the blood-vessels, form at their ultimate ramifications only a net-work and plexuses, so that whatever substances enter into or pass out of the vascular system, must pass through their parietes."

We cannot conclude this analysis of the labours of our author without strongly recommending the memoir to the attention of our readers. The experiments appear to have been performed with perfect fairness, and their results to be faithfully related. Some of the deductions of Professor F. may be questioned, as for instance the non-absorbent power of the veins, but we believe implicit faith may be reposed in the correctness of what he states that he has observed.

XXV. *The Transactions of the Provincial Medical and Surgical Association.* Vols. I. and II. Sherwood, Gilbert, and Piper, London; and Deighton, Worcester, 1833-4. pp. 444 and 546.

These volumes contain much matter of interest. The Society from which they emanated, was instituted in July, 1832; principally for the promotion of the following objects:—1st. The collection of useful information, whether speculative or practical, through original essays or reports of Provincial Hospitals, Infirmaries, or Dispensaries, or of private practice. 2d. The increase of knowledge of the medical topography of England, through statistical, meteorological, geological, and botanical inquiries. 3d. The investigation of the modifications of endemic and epidemic diseases in different situations, and at various periods, so as to trace, so far as the present imperfect state of the art will permit, their connexions with peculiarities of soil or climate, or with the localities, habits, and occupations of the people. 4th. The advancement of medico-legal science, through succinct reports, of whatever cases may occur in provincial courts of judicature. 5th. The maintenance of the honour and respectability of the profession generally in the provinces, by promoting friendly intercourse and free communication of its members, and by establishing among them the harmony and good feeling which ought ever to characterize a liberal profession.

Among the means of carrying into effect these objects, are the holding of an annual meeting of the members at some one of the provincial towns; changing the place of meeting each year; the annual appointment of a member to give a history of medicine during the past year, or an oration connected with medical science; the appointment of a certain number of members each year, to open a communication with eminent medical practitioners in each country with which England has literary communication, and to collect information as to discoveries or questions in agitation, new works appearing, and experiments in progress in the respective countries; and the publication of Transactions.

That the Association is successfully accomplishing the objects for which it was instituted, their Transactions bear sufficient evidence. The two volumes before us, contain an able address, delivered by Dr. Hastings, at the first meeting of the association; and the first anniversary an address by Dr. Barlow, presenting an interesting review of the medical occurrences during the preceding year.

In the department of medical topography, we have Sketches of the Medical Topography of the Hundred of Penwith by Dr. J. Forbes; of Bristol by Dr. Carrick, and of Stourport, Worcester, and its immediate neighbourhood by Mr. Watson.

The *Reports* are from the Birmingham Eye Infirmary, by Dr. Middlemore; the Birmingham Infirmary, and on the state of disease in the city of Worcester.

In medical jurisprudence there is a Case of Poisoning by Cantharides, with a report of the Inquest before the Coroner, by Dr. Hastings; and an account of some Experiments to ascertain the exact Differences between the Changes produced in the Lungs of Still-born Children by their Artificial Inflation, and those produced in the Lungs of New-born Children by Natural Respiration, by E. A. Jennings, Esq.

The articles, however, of most general interest, are the essays and cases, among which we must particularize as especially valuable, Dr. Bardsley's Additional Facts and Observations on the Efficacy of Strychnia in some Forms of Paralysis, Dr. Green's Observations on the Treatment of Syphilis without Mercury, Dr. Barlow Remarks on the Objects and Modes of Medical Investigation, and Mr. James's Observations on the Value of the Different Signs which Distinguish the Sac in Strangulated Hernia.

Dr. Bardsley's essay on strychnia, is devoted to the consideration of the value of strychnia in some forms of paralysis, as established by his more extended experience with this alkali, and by the testimony of other practitioners. Dr. B.'s farther experience with strychnia leads him to repeat, that it is such cases of paralysis as seem to arise from diminished nervous excitement, that this remedy is particularly indicated; and generally speaking, that it is likely to prove more serviceable in paraplegia, unconnected with spinal disease, than in hemiplegia, though he feels confident that it will not unfrequently be found an important remedial agent even in hemiplegic paralysis, when the cerebral mischief is not very extensive, and the nerves are still capable of being acted upon by appropriate excitants. He farther asserts, on the authority of facts occurring within the sphere of his own observation and that of others, that strychnia has proved curative in cases of palsy of long standing, after the complete failure of the discipline ordinarily adopted in these attacks. Various cases published by others, or communicated especially him, are adduced in support of these views.

Dr. B. does not accord with Dr. A. T. Thomson, Paris, Christison and Orfila, as to the strychnia possessing the singular property of expending through the medium of the circulation its influence on the spinal marrow, without involving the functions of the brain, or uncombined with any injury of that organ. And he cites an interesting case, communicated to him by Dr. Booth, of Manchester, which affords an illustration of the absolute influence of strychnia on the brain, as well as on the spinal marrow; also some experiments on dogs, by the same gentleman, confirmatory of this fact. Dr. Root's experience also supports this view. He has known, he says, many patients whilst taking strychnia, to complain of pain in the head, vertigo, and dimness of sight, and sometimes even to such an extent that they have fallen down in a state of insensibility. These observations are important, as showing that a state of cerebral disorganization or congestion, is unfavourable to the employment of strychnia in those forms of palsy which are connected with morbid conditions of that organ, and that in such cases, notwithstanding the assertion of Dr. A. T. Thomson, as to its safety, its administration should be feared.

In the internal administration of strychnia, Dr. B. has mostly commenced with one-sixth of a grain twice daily, and this proportion has been gradually increased to half a grain or a grain at the same intervals; but half a grain of the of the alkali, taken three times in the day, has generally produced sufficiently energetic effects upon the system. In the external use of the alkali, he has been in the habit of directing one-fourth of a grain to be sprinkled upon the blistered surface, night and morning, and the quantity has been increased to half a grain, a grain, a grain and a half, and two grains, applied twice in the day. Three tables are given, exhibiting the ages, duration of complaint, disease and result of twenty cases of hemiplegia, twelve cases of paraplegia, and eight cases

of palsy of the wrists from lead, treated by Dr. Bardsley in the Manchester Royal Infirmary, since the year 1830.

Of the twenty cases of hemiplegia, eleven were males, and nine females. Their ages varied from twenty-five years to sixty-one years, and the duration of the complaint from one month to three years. Of the twenty cases, seven were cured, five relieved, three were slightly benefited, and five received no relief. The cures were principally in the cases of short duration, nevertheless one case of a year and a half's continuance was successfully treated.

Of the twelve cases of paraplegia, eight were males, and four females. Their ages varied from thirteen years to sixty years; the duration of complaint from six months to four years. Of the twelve, four were cured, five relieved, and three received no benefit.

Of the eight cases of paralysis of wrists from lead, all males, their ages varying from twenty-nine to fifty-four years, and the duration of complaint from three weeks to three months, five were cured, and three relieved.

Notwithstanding the immense mass of evidence which has been laid before the profession demonstrative of the fact, that the primary and secondary symptoms of syphilis can be cured without danger, and that any dread of danger, any apprehension of deplorable results from the venereal virus remaining in the constitution, if this remedy be not used, is perfectly chimerical; some physicians, though admitting the possibility of curing the disease without mercury, still consider it a specific, and that the disease is not safely cured without it. If there be any among our readers who concur in these statements, we earnestly solicit them to examine the facts collected by Dr. Green, from his own experience, and if their minds are not too far warped by prejudice, they will, we think, assent to the justice of his inferences—

"That every form and stage of venereal disease, (except iritis,) can be completely and safely cured without mercury; that most cases of the disease are better treated without mercury than with it; that in some cases, mercury not only fails altogether to cure, but aggravates the disease, and therefore, is not a specific; and that what have been considered as some of the worst secondary symptoms of syphilis, result from mercury itself, from the very means used to cure the disease."

As to those who still maintain that syphilis cannot be cured by any other than the mercurial treatment, and that the constitution remains contaminated by the venereal poison, unless mercury be used to eradicate it, there would be at little use in attempting to remove their mental blindness, as to endeavour to convey to a blind man an idea of colours.

Dr. Green, after giving a sketch of the principal facts previously collected relative to the non-mercurial treatment of syphilis, presents a summary of one hundred cases of the disease treated by himself, without a particle of mercury used internally or externally. In the selection of these cases, he says that two objects have been kept in view; namely, that the primary sore should, in some degree, possess the characters of the Hunterian chancre, "a circular, depressed, and sloughy sore, with an indurated base," and that he preferred taking notes of those cases where patients resided in Bristol, that he might have an opportunity of watching the consequences of the treatment, to ascertain if any symptoms of a contaminated constitution should result from syphilis, cured without its supposed specific.

"In these cases, I have remarked," says Mr. G. "not a particle of mercury was used, either generally or locally. The primary sores were treated with sedative and astringent lotions, or simple ointment, as the one or other seemed best to agree with them; local applications, containing mercury, were not used, as any benefit obtained from them might have been attributed to its specific effects. All the sores thus treated possessed more or less resemblance to the true syphilitic chancre, as described by Mr. Hunter. From a fortnight to a month was the time in which they were generally healed; some cases lasted longer, but this was about the average period required for their cure. One case of chancre resisted all applications for four months; every thing in the slightest degree stimulating or astringent, disagreed with the sore; the only thing which suited it was plain water dressing.* Finding all the remedies he had used of no avail, I advised this gentleman to try change of air; he went to the sea side, and in three weeks the sore was healed. If this obstinate case of chancre had occurred in a person of a different constitution, I should, perhaps, have tried mercury; but he was of an irritable and strumous habit, and the sore was of a still more irritable character; I, therefore determined not to use it. In some of the above cases, the local inflammation, accompanying the sore, ran so high, as to require blood-letting, local or general; in some others, thickening and induration remained for some time after the chancres were healed, but this subsided without any thing being done for it. I may here remark, that these sores took a longer time to heal than superficial ulcers and excoriations; sores of the latter description generally healed within a week or fortnight. We sometimes find even these ulcerations exceedingly tedious and unyielding; but, when this occurs, it most generally arises from something wrong in the general health, from disorder of the digestive functions, or from stricture in the urethra; of course we must remove the cause before the disease will yield. It sometimes happens that the slightest form of excoriation, a mere abrasion of the cuticle, will, after a while degenerate into a sore, possessing all the characters of a true chancre; this condition is very often caused by stimulating and improper treatment; we can, by artificial means, produce the same kind of sore. Of 100 cases of primary venereal sores thus treated, buboes supervened in sixteen of them; of these, six only suppurated. The buboes which did not suppurate, were removed, on an average, in about six weeks; in two cases, however, a chronic enlargement of the inguinal glands remained for a longer period, one four and the other seven months; but both of these patients were of decidedly scrofulous habits. The buboes which did suppurate, were healed within two months from their appearance, except one, which remained open four or five months; this patient was also of a scrofulous constitution; ultimately, the whole sixteen cases of bubo were cured. Constitutional affections, of one kind or another, followed in nine cases; these secondary symptoms were cutaneous eruptions, sore throat, pains in the limbs and periostitis. The affection of the skin assumed varied forms; it was papular in three cases, pustular in two, vesicular in one, vesicular and scaly in two, and in the last it was a mixed form of eruption, papular in the beginning, followed by a general redness, and ending in a scaly condition of the surface. These eruptions, at their commencement, were generally accompanied by pains in the limbs, and more or less of febrile action. In some the cutaneous affection was so slight as hardly to deserve the name of disease; and was only alluded to by the patient in a casual manner; two of these cases were papular, a few pimples scattered over the surface of the limbs and trunk; and one was vesicular, resembling a very mild case of varicella. One case of papular eruption was a

* Water dressing is a local application to wounds and ulcers recommended by Dr. Macartney, the Professor of Anatomy and Surgery in the University of Dublin; it is merely plain water applied under oiled silk, and will be found to agree with irritable sores which will bear nothing else. Dr. Macartney has long entertained and taught notions peculiar to himself, on the nature and treatment of inflammation, which, it is to be regretted, this accomplished teacher has not yet published to the profession.

well-marked specimen of the '*Lichen simplex*' of Dr. Bateman; it was attended with some slight febrile feeling at its first appearance; it lasted about three weeks, and then faded away. One of the cases of pustular eruption was also strongly marked, it closely resembled distinct small-pox; this resemblance has been noticed by Dr. Hennen. In this instance, I believe no person could have distinguished the nature of the disease by the skin alone, its history and duration could alone decide the question. The eruption appeared on the trunk, face, scalp, and extremities of this patient; one crop of pustules was succeeded by another; the disease lasted, altogether, three months, was accompanied with a good deal of fever, and pains in the head and limbs; within four months the eruption was removed, and the patient completely cured. This pustular form of eruption I have generally seen to occur in persons of strong constitution, and such was the case in this instance. The two cases of vesicular and scaly eruptions occurred in persons of delicate health, and evidently having a tendency to scrofula; they were the most obstinate cutaneous affections I had to contend with, one lasted between three and four months, and the other nearly seven. The eruption first appeared in the form of vesicles, with an inflamed base; it continued in this state about three weeks, when the vesicles dried, and it appeared that the disease was about to pass off; but the inflamed base now began to spread, and what seemed to be the scab left by the vesicle, extended over the surface until it assumed a regular scaly form, that of syphilitic lepra. These cases were obstinate, and it may be said, imperatively called for the use of mercury, but I determined not to employ it. Both cases occurred in persons of a strumous habit, and the eruption was of a character which I have seen, more than once, degenerate into phagedenic ulcerations of the skin under the use of mercury; both however terminated well. The mixed form of eruption I have alluded to, passed through its stages mildly, and was gone in five weeks.

"The next constitutional affection I have to mention was sore throat; this symptom occurred in four cases, in three of them conjoined with cutaneous eruptions. This affection of the throat was the same in all cases, and presented some characters which, it appears to me, are peculiar to syphilitic disease, though some authors think this ulceration does not belong to syphilis. The tonsils are, at first, enlarged; there is a superficial ulceration extending over these glands, and passing back to the pharynx, and anteriorly extending over the palatine arches: the mucous membrane looks red and granulated; it presents the appearance which granular conjunctiva does on the eyelids. After a short time, a week or more, the inflamed and ulcerated surface becomes covered with a thin layer of coagulable lymph, which adheres to the part; the voice is rough, the throat feels sore, and is painful during the act of deglutition. In some instances, patches of this kind of ulceration extend to the mouth, giving an aphthous appearance to the part. As this is the form of ulceration which I have seen in most cases of syphilis where mercury had not been given, I am led to consider it as the true syphilitic ulcer of the throat. Mr. Rose mentioned that an ulceration of this kind occurred in some of his cases treated without mercury; in one, he remarks, the* 'tonsils looked as if covered with a coat of ill-organized lymph;' in another case he observes, 'the ulcers had irregular margins, and both tonsils had an appearance as if covered with a thin coat of lymph.' This disease of the throat has the peculiar characters above mentioned, and is, therefore, quite a distinct affection from the sloughy excavated ulcer of the tonsil, which has usually been considered the venereal sore throat. Some writers, who advocate the mercurial treatment of syphilis, admit, however, that the foul excavated ulcer of the tonsil, does, occasionally, arise from mercurial irritation; that there is a mercurial ulcer of the tonsil not to be distinguished from the venereal one. Most practical men, I believe, now admit this fact, and hence mercury is

* Med. Chir. Transactions, vol. viii. p. 413.

not so generally resorted to for this form of syphilitic disease; where, however the contrary opinion exists, and mercury be pushed into the system; extensive destruction of the soft parts, and caries of the palate bones, are frequently the results; and, in too many instances, death has relieved the unfortunate sufferer from a state in which he was loathed by others, and loathsome to himself; a miserable poisoned victim to erroneous doctrines. The superficial ulcer I have described, sometimes, when placed under the action of mercury, becomes changed into the excavated ulcer, and goes on progressively extending its ravages, until the mercurial action be arrested. In another part of this paper, I shall mention a very strong instance of this fact, which occurred under rather unusual circumstances. The four cases of sore throat I have alluded to, were entirely removed; the ulceration never went beneath the surface.

"The next and last form of secondary syphilis, which appeared in these cases, was periostitis; it occurred in two cases, in one distinctly, and in the other faintly marked. In one of these, the bones of the head were affected, there was pain, swelling, and tenderness, and the symptoms were aggravated on getting warm in bed; the complaint was obstinate, but at length yielded to counter-irritation, kept up by tartar emetic pustules. The other case was a mild one, it was situated principally in the shaft of the tibia; it did not give much inconvenience, and passed off without any treatment."

The cases just alluded to, have been treated within the last seven years; most of them before the last three years; as latterly, Dr. G. has not, he states, adopted such a rigorous anti-mercurial treatment; he has used local mercurial applications, and where mercury as a purgative or an alterative was likely to improve the general health, he had resorted to it.

"To make this history," he remarks, "a fair and impartial one, it is right that I should mention what unfavourable symptoms, if any, followed this treatment. In one case of tedious cutaneous eruption, the chain of lymphatic glands of the neck became swollen, and they have remained enlarged since. In another case of obstinate scaly and vesicular eruption, the skin remained discoloured, in patches, for nearly twelve months. With these exceptions, not one unfavourable symptom has resulted from the treatment; most of the constitutional affections occurred some years ago, and in persons whom I am in the habit of seeing constantly; and in not one of them has any thing whatever occurred to show a contaminated constitution.

"It affords me pleasure to feel, that not one of my patients suffered any ill effects from withholding mercury. In one case, that of tedious pustular eruption, I thought of giving mercury to try to expedite the cure, as I should do whether this eruption were syphilitic or not; this gentleman was of strong mind, and I made him understand the position in which the question, as to the use of mercury, stood, leaving it to himself to decide. I told him he would get well without mercury; but that his complaint might be tedious; and possibly that the use of this remedy might hasten a cure. I told him, also, of the prejudicial effects which sometimes followed the employment of mercury; he decided not to take it; the termination of the case justified the prognosis; he was completely cured, and has been in good health since the period of his illness, now four years.

"The two cases of vesicular and scaly eruption I have mentioned, occurred in persons of decidedly strumous habits, where, above all others, mercury frequently does mischief; I resolved, therefore, not to employ it, and both cases, ultimately, did well without it.

"While all the facts I have now mentioned prove that syphilis can be cured without mercury, I do not, for a moment, contend that its use should be abandoned altogether in the treatment of venereal complaints. Mercury should be given in these complaints, with the same intention, as if precisely similar symptoms occurred from any other cause. The well-known power of mercury, when

used cautiously and moderately, to improve the general health, to remove chronic inflammations, and diseases of an indolent kind, indicates its use, in some few cases, for the symptoms of syphilis, as if they occurred from any other disease, without reference to any *specific character.* While I admit its use in some cases of syphilis, not for a moment *as a specific,* but on the general principles above stated, I contend that the cases requiring it are but few; a very large proportion of venereal diseases can be as well, if not better, cured without mercury, and *certainly more safely,* because the risk is not incurred of producing the truly melancholy results, which, in some constitutions, follow the treatment of syphilis with this mineral. I think its use, in primary symptoms, should be given up altogether, at least, until there appears some indication for its employment. It cannot now be maintained that a chancre is cured one day sooner where mercury is given, than where it is not; as far as any comparison of evidence goes, it would appear, that these sores are sooner cured, where mercury is not given. If this be true, we gain nothing by using this remedy, and incur the risk of inflicting a severe injury on the patient, as every practical surgeon knows well, that chancres do, sometimes assume a gangrenous and phagedenic character under the mercurial irritation, occasionally ending in the loss of a portion, or the whole of the penis, before the destructive processes can be arrested. The only intention with which mercury can be given, in this stage of the disease, is to prevent the introduction of the venereal poison into the system. But, has mercury this preventive influence? Unfortunately, the history of the venereal disease, under the most full and efficient mercurial treatment, proves that it has no such power. It is too well-known that if mercury succeeds, once, in preventing secondary symptoms, it fails, altogether, in too many instances, to allow us to place reliance on it as a preventive of constitutional symptoms. It is certain that secondary symptoms occur whether mercury be given or not; but whether they follow more frequently in the one case or the other, is, as yet, entirely undecided.

"As far as the army reports go, it would appear that secondary symptoms followed more frequently where mercury had not been used; but it must be remembered, that it was considered that the secondary symptoms following the use of mercury, were more severe and intractable than when it had not been used; no argument can hence be drawn in favour of mercury."

"Secondary symptoms supervening where mercury has not been used, are, in most instances mild, and generally yield in a short time; but where they do not," mercury, says Dr. G. "cautiously given, may be attended with benefit; if, however, when the system becomes affected from the remedy, the constitutional symptoms are aggravated, we ought immediately to stop its use, and treat the disease by other remedies; should we, however, persist in the mercurial course, we incur the risk of totally changing the character of the disease, from a *mild chronic* to a *severe and intractable one.*"

We regret that our limits forbid our noticing here some of the other interesting papers and cases in these volumes, but we shall give abstracts of the most important of them in the periscope of the present or future numbers.

XXVI. *The Cyclopædia of Anatomy and Physiology.* Edited by Robert B. Todd, M. D. Lecturer on Anatomy and Physiology at the Westminster School of Medicine, &c. &c.

We have before us the first No. of this work, which is now in the course of publication. It is to appear in parts—

"Consisting of a series of dissertations, under the headings of the more important subjects of human anatomy, general, surgical, and morbid; of phy-

siology, of comparative anatomy, and of animal chemistry, and in order to unite the advantages of a dictionary with the proposed form of the work, a very copious index will be added, containing all the terms used in the sciences with appropriate references."

Some of the most eminent men of Paris, as well as of Great Britain, are enrolled among the contributors; and from the execution of the No. before us, the work promises to be an exceedingly useful addition to our literature.

The illustrations, which are numerous, are remarkably well executed. We have reason, however, we think, to complain that the labours of our countrymen have been so far entirely overlooked. Thus, in the art. Absorption, not even allusion is made to the experiments of Rousseau, Klapp, Mussey, Coxe, Stuart, Lawrence and Coates, Luzenberg, &c. Whether this arises from ignorance or design, it is equally inexcusable.

XXVII. *A Treatise on Pulmonary Consumption; comprehending an Inquiry into the Causes, Nature, Prevention, and Treatment of Tuberculous and Scrofulous Diseases in general.* By James Clark, M. D., F. R. S. Consulting Physician to their Majesties the King and Queen of the Belgians, &c. &c. Philadelphia, p. 296, 1835.

The greater part of this treatise first appeared in the Cyclopedia of Practical Medicine, and has been elaborately noticed in our preceding No. (p. 303, et seq.) In publishing it as a separate work, the author has carefully revised the whole, rewritten much the greater part of it, and made considerable and interesting additions to almost every chapter, more especially to those on the causes and prevention. Having so recently devoted a large space to the analysis of the original, it is only necessary to repeat the favourable opinion of it already expressed, and to state that in its present form, its value has been much increased. We urgently recommend it to the profession as one of the most important publications on the subject of which it treats, that has yet appeared; it should be in the hands of every student, and on the table of every practitioner.

XXVIII. *Manual of Phrenology; being an Analytical Summary of the System of Dr. Gall, on the Faculties of Man and the Functions of the Brain.* Translated from the fourth French edition. Philadelphia, Carey, Lea & Blanchard, 1835.

The original of this work has been already noticed, (Vol. VI. p. 193,) and it is therefore only necessary for us to state, that the translation bears marks of having been carefully made, and to refer to our review of the original publication.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Newly discovered arrangement of the Arteries in the Erectile Tissue of the Penis.*—The second number for 1835, of Müller's (late Meckel's) *Archiv. fur Anatomie und Physiologie*, contains the account of an interesting discovery recently made by the editor, Professor J. Muller of Berlin, relating to the disposition of the small arteries of the penis, which tends to explain the structure of the erectile tisue of that organ,—a subject which, notwithstanding the investigations of Cuvier, Tiedemann, Moreschi, and Panizza, was still involved in much obscurity. These observations point out a fact entirely new in the structure of the arteries of the erectile texture, and promise to throw some light on the nature of the erectile condition of the blood-vessels.

Most of those who have investigated the structure of the erectile textures of the penis by injections, have contented themselves with filling the veins of the organ, and thus, although the structure of the venous caverns of the *corpora cavernosa*, and the dilated veins of the *corpus spongiosum urethræ* was sufficiently well understood, yet very little was known respecting the mode of termination of the smaller arteries. It has been generally believed that the same small capillary arteries which nourish the penis carry the blood into capillary veins, that the blood passes from these into the dilated venous branches or sinuses, and that the state of erection depends on the retardation of the flow of blood in these venous spaces.

Professor Müller has by a careful injection of the arteries of the penis, pointed out, besides the capillary branches which nourish the penis and transmit the blood into the capillary vessels and dilated veins, a number of very remarkable appendices connected with the smaller arteries, both in the *corpora cavernosa penis* and *corpus spongiosum urethræ*, which, from several circumstances, it is very probable, are the vessels more immediately concerned in maintaining an increased quantity of blood in the penis during erection.

The easiest way of rendering these two sets of arterial branches apparent is to inject the principal artery of the penis, before its subdivision, with size and vermilion of moderate consistence, and then making a longitudinal section of one of the *corpora cavernosa*, to wash away any part of the injected mass which may have passed into the venous spaces. The ramifications of the nutrient arteries will then be easily seen upon the inner sides of the venous spaces, the arteries becoming smaller and smaller, until at last they pass into the minute

capillary net-work, the branches of which cannot be seen with the naked eye. Besides these nutrient ramified arteries, there will also be seen upon a careful examination another set of arterial branches of a different size, form and disposition, which are given off nearly at right angles from both the larger and smaller trunks of arteries. These arterial processes are about one-hundredth of an inch in diameter, and one-twelfth long, and are quite easily seen with the naked eye. They project into the cavities of the spongy substance, and terminate either bluntly or by dilated extremities, without undergoing any ramification. These short arterial processes are turned round at their extremities into a semi-circle or more, and present a contorted appearance, which circumstance has suggested to Professor Müller the name of Helicine arteries, which he has applied to them.

The helicine arteries of the penis are more easily seen in man than in any other animal which Professor Müller has examined. He has found them in all the animals in which he has sought for them; they are to be seen at the posterior part only of the penis in the stallion, but in the dog exist throughout the whole organ.

In man, the helicine twigs of the penal arteries sometimes come off singly, and at other times they form tufts or bunches, consisting of from three to ten branches, and having in general a very short common stem. The swelling at the extremity, when it occurs, is gradual, and is greatest a little way from the end. The helicine branches given off from large arteries are not of a greater size than those coming from smaller ones, and even the smallest capillary arteries of the *profunda penis*, which can be seen with the help of a glass only, give off helicine twigs of a much greater size than themselves.

Each helicine branch projecting into a venous cavern is covered by a thin membrane, which Professor Müller regards as the inner coat of the dilated vein, and when there is a tuft of helicine twigs, the whole tuft is covered with one envelope of a gauze-like membrane. This covering is considerably thicker on the helicine arteries in the posterior part of the *corpus spongiosum urethræ* than in the *corpus cavernosum*, but it seems probable that this is in some measure connected with the state of repletion of the arteries, for when the injection has run very well it becomes difficult to distinguish the external covering.

Professor Müller states that he could not discover any apertures either in the sides or in the ends of the helicine arteries, but he seems to regard it as probable that minute apertures do exist, which may be of a nature to allow the passage of blood in some states and not in others.

The helicine arteries are not, as some might be inclined to suppose, loops of vessel which have been incompletely filled, and which, after making a coil, pass into venous spaces, as E. H. Weber discovered to be the case with the arteries of the maternal portion of the placenta; they are merely projecting branches from the arterial trunks containing blood.

The helicine arteries are more numerous towards the root than near the point of the penis. They exist in the *corpus spongiosum urethræ*, especially towards its bulb, but they are not so easily seen there as in the *corpora cavernosa*. They have not yet been observed in the glans. Their structure is nearly the same in all the animals in which they have been observed: those of the ape bear the nearest resemblance to those of man, and in most animals they are less obvious than in the human subject. In the horse and dog they give off small nutrient twigs from their sides, which render them more difficult to be seen in these animals than in man.

Professor Müller conceives these helicine or tendril-like arteries to have an intimate connexion with the process of erection, and there is every probability that this is the case; but experiments and observations are still wanting to show in what manner these arterial branches are affected in the erected and non-erected condition of the texture in which they exist.

We recommend to the attention of our readers this discovery of Professor

Müller's, whose researches have already done a great deal for the advancement of physiological anatomy. The memoir is accompanied with a well executed engraving, containing numerous representations of the helicine arteries.—*Edinburgh Med. and Surg. Journal, July*, 1835.

2. *Employment of Arsenic for the Preservation of Subjects.*—The following is the method employed by M. Tranchina, of Naples, for the preservation of dead bodies, and which is said to succeed to a miracle.

He injects into the left carotid artery, with a syringe, a solution of two pounds of arsenic, coloured with a little minium or cinnabar, in twenty pints of water, or what is still better, spirits of wine. If there be signs of incipient putrefaction of the intestines, this same liquid must be introduced into the abdominal cavity. By employing the spirits of wine, every part of the body preserves much longer its freshness, and that firmness which is required in anatomical preparations. By this process a body may be preserved, it is said, for more than two months, without emitting any odour or undergoing alteration, and preserving its freshness, flexibility, and natural colour. Afterwards it dries, hardens, and acquires a dull colour, and continues in this state for many years. M. T. has also combined the arsenic with the common material for injection which solidifies on cooling; and he has injected with it the body of an infant which has been perfectly preserved.

The decoration of the order of Francis I. and 3,000 ducats have been bestowed on M. Tranchina, by the King of Naples.—*La Lancette Française, July 7th*, 1835.

PHYSIOLOGY.

3. *Notice of some Experiments on the connexion between the Nervous System, and the Irritability of Muscles in Living Animals.* By Dr. J. Reid. With Observations by Dr. Alison.—Although physiologists are still divided in opinion as to the question whether nerves furnish a condition necessary to the irritation of muscles, (*i. e.* whether every stimulus which excites a muscle to contraction acts on it through the intervention of nervous filaments,) they have now very generally abandoned the once prevalent theory, that the irritability of muscles is derived from the brain or spinal cord, *i. e.* that muscles are continually receiving, through their nerves, from those larger masses of the nervous system, supplies of a certain influence or energy, which enables them to contract; and that some of the statements of Dr. Wilson Philip, in particular, are generally regarded as decisive against this theory.

Dr. Wilson Philip found by experiment, that the irritability of a muscle of which the nerves were entire, was exhausted by applying a stimulus directly to the muscular fibres, (sprinkling salt on them,) even more quickly than that of a muscle of which the nerves had been cut, and where all communication with the supposed source of nervous influence or energy had been cut off; and he states generally that a muscle of voluntary motion, if exhausted by stimulation, will recover its irritability by rest, although all its nerves have been divided.

But in opposition to this statement, and in support of the old theory of nervous influence continually flowing through certain of the nerves into the muscles, it has lately been stated by Mr. J. W. Earle, that when the nerves of the limb of a frog were cut, the skin stripped off, and the muscles irritated by sprinkling salt on their fibres, until they had lost their power of contraction, although they did not lose their power much more quickly than when the nerves were entire, yet *they did not regain their power*, although left undisturbed for five weeks; while the muscles of the limbs of another frog, similarly

treated, but of which the nerves were left entire, completely recovered their irritability.

It occurred as a fundamental objection to the experiment of Mr. Earle, that in the case where the nerves had been divided, the muscles had become inflamed; being found at the end of the five weeks "softer in their texture than natural, a good deal injected with blood, and with some interstitial deposition of fluid in them;" while in the limb to which the salt had been applied, but of which the nerves were left entire, and where the irritability was recovered, "although the colour of the muscles was rather darker than natural, their texture remained unchanged, and there was no interstitial deposition of fluid in them."

In these circumstances it might evidently be supposed that it was the inflammation and disorganization of the muscles, not the section of the nerves, which prevented the recovery of the irritability in the case where the nerves had been cut; and it became important to have the experiment repeated, with care to avoid such injury of the limb of the animal as should cause inflammation to succeed the section of the nerves.

With this view, Dr. Reid performed a number of experiments on frogs, in which the irritability of the muscles of both hind-legs was exhausted or greatly diminished by galvanism, after the nerves of one leg had been divided and the lower part of the limb rendered perfectly insensible and incapable of voluntary motion, (but without stripping off the skin,) while the nerves of the other had been left entire. The state of the muscles of both limbs was examined after some days. The results of these experiments were not uniform; but in several, where every attention to accuracy seemed to have been paid, the irritability of the muscles in the palsied limbs appeared to be *restored as perfectly as in the others;* contractions being excited in them, in several instances, by the galvanism from four or even two plates; whereas, they had formerly been irritated until they were no longer excitable by that from fourteen plates.

That the muscles which thus recovered their irritability had lost all nervous connexion with the brain or spinal cord was proved, not only by their obvious insensibility, but by afterwards cutting off the heads of the animals and forcing a probe along the spinal canal, which excited forcible contractions in all parts excepting the palsied limbs.

Dr. Alison's paper contained the details of several of these experiments; and he stated in conclusion, that a *positive* result in such an inquiry must always outweigh a *negative* one, (particularly where a source of fallacy attending the latter can be pointed out,) these experiments appear fully to justify the assertion of Dr. Wilson Philip, that a muscle of voluntary motion may recover its irritability by rest, although all its nerves be divided; and that they afford, perhaps, more direct evidence than any others in support of the doctrine of Haller, now generally admitted in this country, that the property of irritability in muscles is independent of any influence or energy continually flowing from the nervous system, although, like every other endowment of living animals, it is subjected to the controul of causes which act primarily on that part of the living frame.

Dr. Allen Thomson expressed a doubt whether these experiments warranted the conclusion drawn from them, not because he acquiesced in the theory to which they are opposed, nor because he called in question the accuracy of the results described to have been obtained, but because he knew that former experimenters had failed in producing such diminution or exhaustion of the irritability of muscles as had been found by Dr. Reid; and conceived it possible that some of the numerous fallacies to which such experiments are liable, might not have been sufficiently guarded against.*

The accuracy of Dr. Reid's statement as to the great diminution or apparent

* A Committee, of which Dr. Thomson was a member, was appointed for the repetition of the experiments, which has performed the duty assigned to it.

exhaustion of the irritability of the muscles under the influence of the galvanism, and the subsequent recovery of the power, notwithstanding the division of all their nerves, was satisfactorily established. It is to be remarked, however, that in these experiments, as usual in such cases, the limbs to which the galvanism was applied were kept moist by the same saline solution with which the galvanic trough was charged: and Dr. Thomson has observed, that when they are moistoned with pure water, the diminution of the irritability under the excitement by galvanism is much less obvious. Hence he was led to suspect that the apparent loss of power in the muscles under that process might depend, not on the circumstance of repeated excitement, but on a degree, however slight, of injury to their texture by the action of the salt. This inquiry he proposes to prosecute farther; but in the mean time it is certain that by the usual process of galvanizing a living muscle moistened by a saline solution, a very great diminution of its irritability may be effected, which may subsequently be regained, notwithstanding the division of all its nerves; and as the fact of its recovery, not the cause of its diminution or exhaustion, is the point on which the inference drawn from these experiments rests, that inference may be held to be sufficiently justified.—*Fourth Report of British Association for the Advancement of Science.*

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4. *Notice of some Observations on the vital properties of Arteries leading to inflamed parts.* By Dr. Alison.—These observations were made with the able assistance of Mr. Dick, veterinary surgeon, on the arteries of the limbs of several horses, condemned on account of injury and inflammation there.

The immediate object of inquiry was, whether the tortuous and stongly pulsating arteries leading to an inflamed part are really endowed with a greater vital power of contraction than sound arteries; and the method taken to ascertain this was to make a comparative examination of the condition of these arteries, and of the corresponding arteries in the opposite sound limbs, immediately on the animals being killed, (by blowing air into their veins;) and again after the lapse of 16 or 24 hours, when it is known that the tonic contraction, which takes place at the time of death, and is the indication of the only vital power which experiments authorize us to ascribe to arteries, has relaxed.

The animals were killed, and the observations made, at different periods varying from twelve hours to twenty days after the commencement of the inflammation, in the five cases of which an account was read. The extent of the inflammation was various. In all the cases, the artery leading to the inflamed part, when laid bare as high as the groin as soon as possible after the death of the animal, was larger in its whole length, *i. e.* had contracted less at the moment of death, than that of the sound limb. In two of the cases, where the inflammation was of long standing, and the coats of the artery appeared to have been effected by it, this vessel at the second examination appeared smaller than the artery of the sound limb, having not only contracted less at the moment of death, but dilated less after death, than the artery in the natural state. In the other cases the artery of the inflamed limb remained larger than the other at the second examination; and it was farther obvious that its elasticity was impaired, for when slit open and smoothed out, it had less power than the sound artery of recovering the cylindrical form.

In all the cases, the artery of the inflamed limb retained after death a considerable quantity of blood, while the other was almost empty; and that this was not owing to inflammatory effusion, preventing the artery of the effected limb from emptying itself at the time of death, was proved, in two of the cases by cutting across the vessel, immediately on the death of the animal, a little above the inflamed part, whereby it had full opportunity to rid itself of its blood, if it had retained the power to do so.

One of these observations was made in the presence of Dr. Yelloly, Dr. Clark, Dr. Fletcher, Mr. Broughton, Mr. Clift, and Mr. Bracy Clark: and it may be added here, that in a subsequent experiment, in which Dr. Alison and

Mr. Dick were assisted by Dr. Fletcher, they obtained farther proof of the loss of elasticity in the artery of an inflamed limb, by finding that after it had been distended by a given weight of mercury, (in the way practised by Poiseville,) it had less power than the corresponding sound artery, to contract on itself and expel its contents when the distending force was withdrawn. But this last experiment was made too long after the death of the animal to justify an inference as to the strictly vital power of the vessel.

Dr. Alison stated, that it seems now generally admitted by microscopical observers, that during by far the greatest part, and during the highest intensity of inflammation, nothing but dilation or relaxation of the *small* vessels of the inflamed part can be perceived. If the present observations shall be confirmed by others, they will show more distinctly than any statements hitherto on record, that the same holds true of the *larger* vessels supplying an inflamed part. Now, there are two changes in the movement of the blood through the vessels of an inflamed part which seem well ascertained by many observations, viz. retarded movement or absolute stagnation, (*stase du sang*,) in many of the small vessels most affected, even during the height of the inflammation; and accelerated movement in the neighbouring vessels, with greatly increased transmission; in a given time, through the whole veins of the part. This last change may, perhaps, be reasonably ascribed to the relaxation of the vessels giving increased effect to the impulse from the heart; but it seems impossible to ascribe likewise to that relaxation of vessels, the former which is just the opposite change in the movement of the blood; and yet no modification of the action of any of the vessels, except simple relaxation, can be detected.

The fair inference from these facts therefore seems to be, that the phænomena of inflammation are truly inexplicable by any changes which occur, during that state, in the contractile power of the vessels containing the blood; and that, instead of seeking for an explanation of these phænomena in the state of *contractions* of any of the solids, we ought rather to look for it in the state of the *attractions* subsisting during the living state among the particles of the blood, and between them and the surrounding solids. And this inference the author thinks might be supported by reference both to other facts in the history of inflammation, and also to many other phænomena of the living body, both in health and disease.—*Ibid.*

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5. Report of Progress made in an Experimental Inquiry regarding the Sensibilities of the Cerebral Nerves, recommended at the last Meeting of the Association. By Marshall Hall and Mr. Broughton.—Some disagreement appears to exist amongst the results of the investigations regarding the sensibilities of the cerebral nerves, which demands farther experimental inquiry. A series of experiments has therefore been instituted at the request of the Committee of the Medical Section, and the establishment of Messrs. Field in Oxford street, London, was selected for the purpose of carrying the inquiry into effect; the horse and the ass, from their large size, being considered as the most favourable subjects for the free exposure of the nerves.

The properties of some of the cerebral nerves being admitted upon other grounds than experimental proof, this investigation was exclusively directed to the facial branches of the fifth pair of nerves, the hard portion of the seventh, the vagus, the spinal accessory, the glosso-pharyngeal, the lingual, and the sympathetic nerves. Upon the properties of the first, second, third, fourth, sixth, and the soft portion of the seventh pairs of nerves no doubt or discrepancy exists.

It has long been known that the properties of the cerebral nerves are various. Thus, one nerve governs the function of motion; another that of some specific sensation, as of light or sound; and these properties are held independently of each other. To understand clearly the properties of nerves, it is also necessary to apply the test of experiment to their *roots*; for branches from two or more roots unite to form one nerve apparently, which may then assume

two distinct properties, that is, the peculiar property of each root. This is exemplified in the origin and distribution of the nerves of the face.

The apparent discrepancies in the results of experiments probably depend much upon the indefinite manner in which certain physiological terms have been employed. Thus, *sensation* has been coupled *with* consciousness in some instances, and in others it has been supposed to exist *without* consciousness. In the present report the term *sensation* implies *consciousness*. It is considered as identical with *feeling*, and when violently excited it becomes *pain*. And this is manifested by *general and instantaneous* efforts or struggles. *These are, therefore, the signs of sensibility.*

Three modes of judgment have appeared as necessary to be kept in view in the present inquiry in reference to the above definition:

1. It was observed that when a nerve of unequivocal sensibility was pricked or pinched, an *immediate and general* struggle followed. The facial branches of the fifth nerve are examples.

2. That when a nerve as unequivocally devoted to motion is pinched, there is an *immediate contraction of the muscles which that nerve supplies, and of no other muscles.*

3. That on pinching the par vagum, neither of the phænomena above noticed occurs; but by continuing the compression for a few moments, an *act of respiration and of deglutition follows, with a tendency to struggle and cough.*

Of these three phænomena the first only is considered as indicating the property of sensation, or the power in the nerve subjected to experiment to transmit sensible impressions.

The movements in the third instance appear to arise from secondary causes, *the mechanical irritation of the nerve not being attended with immediate consciousness.*

1. *Experiments upon the Facial Nerves.*—These nerves govern the actions of the face, and preside over the sensibilities of its different organs and surfaces. The first function is performed by the facial portion of the seventh nerve and a portion of the fifth. The second function is performed by the large portion of the fifth pair of nerves. Thus the fifth nerve possesses two distinct properties of transmission, one voluntary, the other sentient, in consequence of its having two distinct roots. One of these roots, the largest, has a ganglion attached to it, and is exclusively a sentient nerve. The smaller root has no ganglion, is insensible, and governs the motions of those muscles which it supplies. The first fact is easily gained by experiment, but the second is admitted upon other grounds, for the smaller root cannot be experimented upon in the living animal. It is to be observed that the larger root of the fifth nerve is divided into three branches, spread and ramified over the face, and frequently connected in its ramifications with branches of the seventh nerve; so that unless the experimental tests be applied to distinct branches, no certain response can be obtained as to their several properties.

Pricking or pinching the trifacial nerve was attended with instantaneous indications of consciousness; when its branches were divided, all sensibility ceased in the parts which they supply. The *lower* divided ends made no response when bruised, but the upper indicated sensation. The motions of the face, however, still remained unimpaired, until the seventh nerve was divided as near its origin as possible, when the organs which it supplies became permanently motionless. When this nerve was slightly pinched in its entire state, those muscles exclusively which it supplies were seen to be convulsed, without any *general* effort; when the compression was increased, and continued for a few moments, signs of uneasy respiration occurred. Pricking this nerve with a needle and cutting through it produced no struggle whatever, as is the case with the trifacial nerve. When the lower end of the nerve, after division was irritated, no movement followed; but on compressing the upper end, the same signs were exhibited as when the nerve was irritated in its entire state.

2. *Experiments upon the Nervus Vagus.*—In the year 1820, Mr. Broughton

experimented upon this nerve; the results were published in the *Quarterly Journal of Science of the Royal Institution*. It was found to be insensible when slightly pinched, pricked, or divided. The present experimental investigation confirmed this remark. It was also on the former, as well as upon the recent occasion, clearly shown that, when a forcible compression was continued a few moments upon the nervus vagus, a respiratory effort followed, and an act of deglution, with a cough and a struggle. In the recent investigation it was observable that when the nervus vagus was divided, mechanical irritation applied to the upper end of the divided nerve produced the same signs as when the nerve was entire. Every repeated compression of this nerve, (as was also the case with the seventh,) produced corresponding respiratory struggles; whilst a uniform, uninterrupted compression caused no repetition of the phænomena. An additional argument in support of the opinion that these effects are independent of any sensible property in the nerve itself is furnished by the fact that Dr. Marshall Hall has found precisely similar effects to occur in the turtle after its decapitation, on pricking the lateral spinal nerves, whether of the sentient or motory class.

3. *Experiments upon the Spinal Accessory Nerve.*—This nerve having been pricked without any response, was then slightly pinched and scraped; when the sterno-maxillaris muscle, the levator humeri, and other muscles of the neck exclusively were seen to contract at each application of this mechanical irritation. But when the forceps was applied firmly, and continued a few moments, similar effects were produced as with the vagus and the seventh. The branches of this nerve appeared to be equally destitute of sensibility with the root. The compression of the upper end, after dividing this nerve below its bifurcation, was followed by no effects, unless the pressure was made opposite the giving off of the anterior branch, when the same phænomena occurred as were exhibited in the entire nerve.

4. *Experiments upon the Glosso-Pharyngeal Nerve.*—When this nerve was pricked, scraped, or divided, no response was observed. The muscles of the root of the tongue were most probably set in motion by the compression of this nerve at intervals; but no opportunity occurred of bringing this part of the tongue into view. Neither in its entire nor divided state did any struggle arise from the continued compression of this nerve, which is therefore regarded as one simply of muscular motion.

5. *Experiments upon the Ninth Nerve.*—The sensible surface of the tongue is supplied by the ganglionic portion of the fifth nerve, whilst the muscles of its fore part are furnished with branches from the ninth nerve. No sign of sensation was evinced by mechanically irritating the trunk of this nerve, and its division was unattended with any sign of feeling or pain. But upon pinching it slightly at intervals, those muscles which it supplies, on the same side of the tongue, were convulsed. If the nerve was forcibly compressed, a slight gulp followed. When the nerve was divided, pinching the upper end of it was not followed by any muscular contractions.

6. *Experiments upon the Sympathetic Nerve.*—No experiments upon this nerve have hitherto exhibited any signs of sensation or muscular motion of any kind whatever. Its division is never followed by any visible effect.

Remarks.—By these observations some researches of other experimenters stand confirmed, whilst others are contradicted; the necessary consequence of discrepancies, often arising from the different modes of applying certain terms. Although the mysterious properties and actions of the nerves may never be completely unravelled, yet much has been effected by the successive and combined efforts of physiologists of different ages and countries.

The present investigation leads to the assumption, that one only of those nerves which derive their roots from the brain itself is, according to the definition laid down, a nerve of sensation. This is the larger and ganglionic division of the fifth nerve, whereby animals are enabled to examine by touch and to feel.

With regard to the other nerves subjected to experiment in this inquiry, none of them appear to possess in themselves any power to excite consciousness or feeling directly. Some of them are simply nerves of motion, and they transmit no other impressions but such as excite local muscular motion, limited to the muscles which they supply. Others, again, seem to possess a property of a different description from either of the two former kinds. One of these, the eighth for example, appears to be so intimately connected with the respiratory function as to be capable of influencing it in a most remarkable degree, without exhibiting any sign of sensation in itself, or of simple and direct muscular contraction.

It is a most remarkable fact, that when a nerve which influences respiration is divided, and the upper division is bruised or compressed for a few seconds, the same effects occur as when the irritation is applied to the entire nerve. This phænomenon affords matter of curious and interesting speculation with regard to the relations which subsist between the nervous and the respiratory functions.

The farther pursuit of this inquiry may lead to some farther development of facts hitherto exposed in some instances to doubt and controversial discussion.

Dr. Hall was necessarily absent at one of the experiments, that on the ninth nerve; but he feels perfectly satisfied with the joint testimony of Mr. Field and Mr. Broughton.—*Ibid.*

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6. *Inquiries into the Varieties of Mechanism by which the Blood may be accelerated or retarded in the Arterial and Venous Systems of Mammalia.* By Dr. T. J. Aitkin.—The attention of the Section was particularly directed to four modifications of arterial distribution, as indicated, (1.) by the angle at which a branch comes off from its trunk; (2.) the direction of the vessel; (3.) the subdivision; and (4.) the formation of plexus.

In illustration of the first, or angle of origin, Dr. Aitkin exhibited a preparation of the aorta of the tiger, in which the superior intercostals arose at an acute, the middle at a right, and the lower at an obtuse angle; from which he inferred that the force and velocity of the blood are rendered equal through the whole series. In speaking of the direction of the vessel, he adverted to the tortuous entrance of the internal carotid and vertebral arteries into the skull in the human subject, and showed that it is still more remarkable in the horse, which in feeding requires to have the head for a considerable time in the dependent posture. But the best examples of the tortuous or serpentine course are to be seen in the spermatic arteries of the *Mammalia*. This mechanism, the author contends, adapts the circulation to the various positions in which organs may be placed, and to their states of action and repose. In speaking of the third modification, or the subdivision into numerous long branches, he particularly alluded to the observations of Sir A. Carlisle with respect to the arteries of the sloth, and showed that a similar ramification is found in the hedge-hog, both in the arteries of the panniculus carnosus and of the mesentery. Of the last modification, the plexus, he showed examples in the rete mirabile of Galen in the internal carotid, and of Hovius in the ophthalmic artery, of the *Ruminantia*. He inferred that this structure prevents valvular turgescence, which would otherwise occur during the long period these animals keep their head in the dependent position while browsing. He also showed that a rete mirabile exists in the ophthalmic artery of the seal and goose, and considered it probable that in them it is conducive to the alternate adaptation of the eye to vision in air and water. He described the remarkable plexiform arrangement which exists in the mesenteric arteries and veins of the hog; and instituted a comparison between those vessels in carnivorous and herbivorous *Mammalia*, concluding that these modifications are in conformity with the transmission of blood through the liver, the rapidity of the peristaltic motion, and the power of nutrition.—*Ibid.*

7. *Superfœtation.*—The following example of this phenomenon is recorded by Richard Dick, Esq. in the *Jamaica Physical Journal* for April last. A negro woman named Henny Gay, an apprentice on Orange Park Plantation, in the Parish of Saint David, whose reputed husband is a negro, was on the 12th day of December, 1834, delivered of two male children—one a fair mulatto, the other a negro. The twins were both alive on the 25th of February last, and are fine thriving children. Though Mr. Dick has done all in his power by the offer of money and otherwise to get the woman to give a candid account of the circumstances which might have been the cause of this phenomenon, all he can get from her is, that the children were given her *by God*, and that she had nothing to do with any *white* man.

Dr. V. Holcombe of W. Granville, Mass. in a communication to the *Boston Medical and Surgical Journal*, (xiii. 64,) states that a similar occurrence took place in a black family, whom he first knew in 1812 or 13. The twins in this case were females, and eight or ten years old when Dr. H. first saw them. They were known by the name of the black and white twins. From the period first mentioned Dr. H. lost sight of these twins until 1816, when he was more forcibly struck than formerly with the dissimilarity of these children—the one a woolly-headed negress, black as jet, and in these respects resembling both parents, but in the form of the face and head bearing a close resemblance to the father—the other a light olive mulatto, with straight dark, though not black hair, hazel eyes, exhibiting much less of the negro in the general contour of her person than ordinary mulattoes. The mother subsequently confessed that about nine months previous to the birth of these children, she had a connexion with a white man, who he and the mother believed to be the father of the white child. The black child had a close family resemblance to her father. There were several other children in this family, some older and some younger than the twins, all of them very black.

PATHOLOGY.

8. *On Apoplexy.* By William Stokes, M. D.—The term apoplexy, as I suppose you all know, is derived from a Greek word, signifying a stroke or blow. It is a term which, in the present state of medicine, has been very frequently abused, or at least employed in very different senses, and hence the many erroneous opinions respecting it. The true meaning of the term expresses an alteration of the phenomena of the life of relation, that is, of the functions of the cerebro-spinal system. In taking a view of the nature of this alteration, we find that the attack generally comes on in a sudden manner, and that the functions of the brain are partially, or completely suspended. You are aware that the manifest phenomena of the life of relation are those which belong to *sensation*, *muscular motion*, and *the intellect*, and that the system of the life of relation is composed of the brain, spinal cord, and nerves. Now suppose, for example, that a man gets an attack of apoplexy, we find him paralytic—here is a lesion of the muscular function. We find him insensible to external stimulants, he feels no pain—here is a lesion of sensation. We may find his sight, hearing, taste, smell, and touch are injured. He lies in a state of insensibility, and is unconscious of every thing passing around him—here we have an example of interruption in the performance of the intellectual functions. All these phenomena exhibit the various lesions superinduced by an attack of apoplexy in the functions of those organs which subserve to the life of relation.

I have said that the term apoplexy is frequently abused in modern medicine. From the circumstance of most cases being accompanied by an effusion of blood on the surface, or into the substance of the brain, the term has been also applied to sanguineous effusions into other organs, and we hear every day of pulmonary and hepatic apoplexy; terms implying the extravasation of blood into the substance of the lung or liver. The analogy, however, in such cases will on exami-

nation be found to be coarse, and the application of the term loose and improper. Apoplexy, as a cerebral disease, may occur with or without effusion; in either case the disease, *quoad* the lesion of function, is the same; but to give the name of apoplexy to hæmorrhage into the lungs or liver is improper. The term apoplexy should be used only with reference to the brain, and applied to a particular train of lesions in the functions of the life of relation occuring *with or without an effusion of blood, or even congestion.* When we have effusions of blood into other viscera, we may have them unaccompanied by any apparent lesion in the functions of the organ affected, (a circumstance rarely met with in the case of the brain,) and it would be much better to give some other name to those hæmorrhages into the substance of the liver and lungs, than to designate them by one drawn from a loose and imperfect analogy.

The suspension of the phenomena of the life of relation, complete or partial, which constitutes apoplexy, may be connected with any of the following pathological conditions. First, great congestion of the brain, in which the vascular system of that organ is overloaded, but without extravasation of blood or serum; this is termed *the congestive apoplexy.* In the next place, we may have this congested state of the vessels of the brain with an extravasation of blood on its surface. To the latter form the *meningeal apoplexy* has been applied. Thirdly, with an effusion of blood into the substance of the brain, which is the most common case; and, lastly, we may have complete apoplexy, without morbid appearance, or, if there be such, *quite insufficient to account for the phenomena.* A man will fall down suddenly, he will lie in a state of insensibility, with stertorous breathing, coma, and paralysis, he will die with all the symptoms of the worst form of apoplexy, and yet on dissection the brain may be found *to all appearance healthy.* This is what has been termed by the older authors the nervous or convulsive apoplexy, of the real nature of which we are still as ignorant as we are of the nature of tetanus, hydrophobia, and other nervous diseases unaccompanied by perceptible organic change.

This is the *simple apoplexy* of Dr. Abercrombie, of which he gives several most important cases, and refers to others related by the older authors. You will at once admit that it is not more extraordinary that apoplexy should exist without perceptible organic change, than mania, tetanus, hydrophobia, and other affections. Of the fact there is no doubt. Such cases indeed are rare, which in one sense may be looked on as a fortunate circumstance. But in the progress of other diseases, this nervous coma or apoplexy is by no means uncommon. Thus there is no symptom more common than coma in typhus, and yet if you examine the head after death, you generally either find no lesion at all, or such as will not be sufficient to account for the symptoms. The coma, which occurs in cases of painters' colic too, appears to be closely connected with this nervous apoplexy. You will recollect an interesting clinical experiment I made in the case of a patient with painters' colic who had profound coma. In this case I thought it probable that the condition of the brain bore no resemblance to sanguineous apoplexy, because the symptoms of painters' colic are seldom or never accompanied by hyperæmia of the nervous or other systems. Under this impression, I prescribed a full opiate, and this not only did not increase the coma, but, on the contrary, produced the very best effect, for the patient was amazingly improved the next morning. I do not so much mean to say, that opium is useful in nervous coma, as that in this instance, at least, the coma was not of the congestive kind. It is not unlikely, too, that the coma of jaundice is of the same description and unconnected with any decided hyperæmia of the brain. I am aware that in jaundice the coma is supposed by some to depend upon a bilious condition of the blood circulating in the brain, but there are so many cases of persons who have laboured under jaundice for years without having coma, that we must seek for some other explanation. Now, so far as we know of the encephalon in persons who have died of jaundice, it appears that little or no congestion exists, and hence it seems probable that the coma of jaundice is similar to that of nervous apoplexy.

I shall now proceed to the consideration of those forms of apoplexy which are connected with changes more or less apparent in the circulation of the head, and with which we are consequently better acquainted. I have told you that simple congestion of the brain may be accompanied by symptoms of apoplexy, or that we may have the disease presenting in addition to this an effusion of blood into the substance, or on the surface of the brain. The simplest idea you can get of the condition of the brain in the congestive form, is to consider what its state is in persons who have been hanged. These persons have the vessels of the brain loaded with blood from the violent interruption of the venous circulation. Now, this increase in the quantity of blood circulating in the brain, may arise from two causes, one depending on the interruption of the venous circulation, the other produced by an increased action of the arterial system. Hence in certain cases of disease of the heart, where the blood is sent with great force to the head, there is a strong predisposition to apoplectic attacks. The kind of disease of the heart, however, which has been found most liable to produce this, is not, as you would suppose, Corvisart's active aneurism, but simple hypertrophy of the heart, where the cavity of the left ventricle continuing the same, its walls are increased in thickness and strength, so that on the natural quantity of fluid an increased impulse is exercised. Such at least is the result of Andral's researches, and there is every reason to place confidence in the accuracy of his conclusion.

About this congestive apoplexy there appears to have been a good deal of misapprehension. You have all heard of *the serous apoplexy*. In this form it has been supposed that the cause of the compression of the brain and all the other symptoms is an effusion of serum, just as an effusion of serum into the cavity of the pleura will produce compression of the lung and dyspnœa. The idea which has been generally entertained is, that the effusion of serum is the cause of *all* the symptoms, and, in consequence, the same active treatment has not been adopted as in the other forms of apoplexy. This opinion will be best refuted by the investigations of Dr. Abercrombie, and I cannot do better than read for you the opinions of this eminent writer on the subject, as given in his celebrated and admirable work, which I have no hesitation in saying constitutes one of the brightest ornaments of British medicine.

"The distinction, which has been proposed betwixt sanguineous and serous apoplexy, is not supported by observation. The former is said to be distinguished by flushing of the countenance and strong pulse, and by occurring to persons in the vigour of life; the latter by paleness of the countenance and weakness of the pulse, and by affecting the aged and infirm; and much importance has been attached to this distinction, upon the ground that the practice which is proper and necessary in the one case would be improper or injurious in the other. I submit that this distinction is not founded upon observation, for, in point of fact, it will be found that many of the cases, which terminate by serous effusion, exhibit in their early stages all the symptoms which have been assigned to the sanguineous apoplexy, while many of the cases, which are accompanied by paleness of the countenance and feebleness of the pulse, will be found to be purely sanguineous; and one modification of the disease in particular will be described, in which these symptoms are very strikingly exhibited, while the disease is found to be sanguineous apoplexy in its most hopeless form.

"Portal has described a series of cases which afford the same result; of three, which presented all the symptoms of serous apoplexy, one was saved by repeated bleeding, and in the other two, which were fatal, there was found extensive extravasation of blood. Case XCVI., lately described, forms a remarkable addition to these observations. If any case could be confidently considered as serous apoplexy, this was such. Dropsical effusion had existed in the body for months, and in defiance of every remedy it had been progressively gaining ground. There were symptoms indicating its existence, both in the thorax and in the abdomen; the patient then became comatose with pale countenance, and

died; but though dropsy was found in the other cavities, none could be detected in the brain.

"In other parts of the body serous effusion is very seldom a primary disease; it arises as a result either of inflammatory action, or of impeded circulation, and takes place slowly, not accumulating at once in such quantity as to induce urgent symptoms. It is therefore in the highest degree improbable, that it should occur in the brain as a primary disease, and accumulate with such rapidity as to produce the symptoms of an apoplectic attack.

"The quantity of fluid effused bears no proportion to the degree of the apoplectic symptoms. We find it in small quantity, though the apoplectic symptoms had been strongly marked and long continued; we find it in large quantity when the symptoms have been slight; and, finally, we find most extensive effusion in the brain where there have been no apoplectic symptoms at all. The direct inference from these facts is, that, in the cases of apoplexy with effusion, the presence of the fluid cannot be considered as the cause of the apoplectic symptoms."

The same error has been committed with respect to hydrothorax, a disease almost never primary, but the result of either pleuritic inflammation, obstruction of the heart or lungs, or some analogous cause. The cause of the symptoms is not the mere effusion of fluid, but some preëxisting disease which has given rise to a serous effusion. In Dr. Abercrombie's work you will find the remarkable fact stated, that there may be a copious effusion of serum in the head without producing apoplectic symptoms. The following case, mentioned by Dr. Abercrombie, furnishes a remarkable illustration:—A patient, who had laboured under hypochondriasis for upwards of thirty years, began to decline rapidly in health. He was extremely feeble, his bowels costive, his sleep disturbed, and his appetite gone. This state continued for some time, and he began to sink, but he never complained of head-ache, giddiness, convulsions, or paralysis, and his mental powers remained unimpaired until a very short time before death. Yet, on opening the head, there was an exceedingly copious effusion of serum found under the arachnoid, and in some places this was so great as to give the arachnoid the appearance of small bladders filled with water. The ventricles were distended with fluid. Dr. Abercrombie gives another case, where the quantity amounted to eight ounces, and notices a case, mentioned by Dr. Marshall, of a maniac who died of mortification of the feet; a few hours before death he became perfectly rational, yet effusion was found both on the surface of the brain and in the ventricles, amounting to more than a pound.

All these facts go to prove, that what has been termed serous apoplexy is only an apoplectic attack depending on congestion of the brain, that in some cases we may have this congestion accompanied by serous effusion, in others not; that the effusion is secondary and by no means of constant occurrence, and that altering our practice and pursuing a less active plan of treatment in such cases would be improper. The same treatment should be adopted in the serous as in the congestive form of the disease, for where the nature of the affection is the same the same curative means should be employed. Why it is that effusion takes place in one case and not in another we cannot tell; such changes are connected with laws of organization, of which we are at present ignorant. We know as little why this should occur as why inflammation of the liver in one case is followed by enlargement, in another by the secretion of pus, in a third by cancer, or in a fourth by hydatids.

We now come to the consideration of apoplexy with extravasation of blood. This is the form of the disease to which the term apoplexy has been restricted by one of the last writers on the subject, M. Rochoux. In this affection the extravasation of blood, which constitutes the principal pathological feature of the disease, is found to exhibit a remarkable variety as to its seat and extent. In some cases the blood is effused on the surface of the brain, in others into its substance, and in a few cases into the ventricles. De Haen gives some cases of apoplexy produced by rupture of the choroid plexus, but in the great majority

of cases, where blood is found in the ventricles, the extravasation has taken place in one hemisphere, and, tearing through the substance of the brain, has made its way into their cavities. Of the three varieties of apoplectic effusions, the ventricular is the rarest; the next to this is the meningeal, or that in which the blood is poured out on the surface of the brain, and the most common is where it is effused into the substance. It has been also found that certain parts of the brain are much more liable to sanguineous effusions than others; of the reason of this, as of many other phenomena connected with the circulation of the brain, we are still in ignorance. The following table, which you should bear in mind, exhibits a remarkable preponderance in the liability to sanguineous effusions of certain parts of the brain. It has been taken from the Precis d'Anatomie Pathologique of Andral. The following is a summary of the results of 386 cases of apoplexy.

In 202 cases, the effusion took place into the substance of the hemispheres of the brain, in that part which on a level with the corpora striata and optic thalami. The portions of the brain next most liable to effusions are the corpora striata; and here we have 61 cases. Next to this are the optic thalami, in which we have 35 cases. In that portion of the hemispheres above the centrum ovale, 27 cases. Lateral lobes of the cerebellum, a proportion of 16 cases. In those portions of the brain anterior to the corpus striatum, 10 cases. In the mesocephalon, 9. Spinal cord, 8. Posterior lobes of the brain, 7. Middle lobe of the cerebellum, 5. Peduncles of the brain, 3. Olivary bodies, peduncles of the cerebellum, and pituitary gland, 1 in each, making 3.—Total 386. Out of these, we find 325 cases occurring in the hemispheres of the brain, corpus striatum, and optic thalamus.

In the number and size of these effusions we find the greatest varieties. In some cases an enormous effusion takes place, and many ounces are extravasated into the substance of the brain; in others, the quantity is trifling, being sometimes as small as a pea, or even less. It has been observed that in cases where numerous extravasations were discovered, they were generally found to be in different states, as if they had occurred at intervals, and not simultaneously. This leads us to the knowledge of one of the most important facts in pathology, that in many cases of apoplexy, after a clot has been formed, nature commences at an early period a process of cure. The change, which takes place in cases where a patient recovers, seems to be the following:—It becomes at first somewhat gelatinous, it is next observed to be more consistent, and it loses its red colour, and takes on a whitish or yellow appearance. The clot is gradually removed, and along with the absorption of the clot there is a process of isolation going on. A fine membranous cyst, furnished with vessels, is formed round the clot. In some cases the clot is replaced by a quantity of serous or gelatinous fluid; but in the majority of instances this does not occur, and the cyst has been found empty. This is a fact which has been established by numerous observations.

There is the greatest possible difference as to the period at which the absorption of the clot is completed; but we may safely assert, from the number of cases in which, after paralysis, a recovery takes place, that this process is of very common occurrence. In several cases, where apoplexy followed by paralysis has happened several times during the lifetime of the patient, a number of those cysts, corresponding with the number of attacks, and presenting various appearances according to the date of their formation, have been found. It appears then that the cure of apoplexy depends solely on the absorption of the clot; and that, as long as this remains unabsorbed, the patient is in danger. In some cases absorbtion does not takes place at all, the clot becomes organized; and in this way it is supposed that some of the tumours found in the brain are formed. There are several circumstances which favour the absorption of the clot, but nothing so powerfully as a healthy condition of the whole cerebral circulation. This leads us to the consideration of the importance of paying attention to the head long after an attack of apoplexy. It inculcates the necessity

of avoiding every thing calculated to add to the existing congestion, and shows that, in the paralytic or after-stage of an apoplectic attack, we should not neglect to deplete the head from time to time. The great point is to keep the head perfectly free from irritation; for it has been found, that, where a cure appeared to be going on, any new irritation applied to the brain has had the effect of arresting the absorption of the clot, and marring the process of cure.—*London Medical and Surgical Journal, July 26th*, 1834.

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9. *Circumstances which predispose to Apoplexy.* By William Stokes, M. D.—Apoplexy with sanguineous effusion may occur at any period of life; it is not uncommon even in persons of tender years. Billiard details an instance of this in a child soon after birth. There are also several cases mentioned as occurring in children during the first three or four years. Andral gives the case of a boy of nine years of age, who died of apolexy, with a vast effusion of blood. One of the most remarkable cases of this kind I ever witnessed, occurred in a child who had just been weaned. This child had been labouring for some time under symptoms resembling hydrocephalus, and then suddenly got an attack of convulsions, followed by coma and paralysis of one side. From a careful study of the symptoms, I ventured to make the diagnosis of apoplectic effusion, and on examining the brain after death, there were nearly three ounces of blood found effused in the base of the brain. But though apoplexy may occur at any period of life, there is a greater liability to it at a particular period. Rochoux has shown that the age at which there is this greatest liability, is towards sixty, and diminishes towards seventy. The number of cases which occur between sixty and seventy are very great, when compared with those between seventy and eighty; and after eighty he considers the liability to be still farther diminished. It seems strange, that persons after seventy should not be so liable to attacks of apoplexy as before that period, but such is the fact. It has been thought that this may be explained by the anemic state of the brain in old persons; it is said, that at such an advanced age general emaciation takes place, and the quantity of blood is greatly diminished. This explanation, however, is doubtful, because it is at present well ascertained, that persons of ordinary development, who are neither fat nor thin, and also persons of spare and delicate habit, are as much, and even more, liable to apoplexy than the fat and plethoric. It has been ascertained by careful investigations, that a high degree of plethora does not necessarily predispose to the disease, and that it is oftener met with in persons not of a plethoric habit than in those who are. These considerations throw some doubt on the opinion that an exemption from apopletic attacks is connected with an anemic condition of the system. It generally happens, however, that at this advanced period of life, from the general debility of the system, and the incapacity for active exertion, a man ceases to employ his thoughts about business, and there is little exercise for the intellectual functions. We now have finished the task; the brain reposes from the turmoil of active and incessant thought; there is a comparative absence of mental exertion, and this may in some degree account for the rarity of apoplexy after the age of seventy.

With respect to the different temperaments as bearing on this point, Rochoux shows that in Paris, at least, there was a nearly equal frequency of the disease in individuals of the sanguine, sanguineo-bilious, and sanguineo-lymphatic constitutions. The bilious temperaments, however, are much less liable. Such is the result of the observations in Paris; but it must be recollected, as Rochoux observes, that in that city the bilious temperament is the rarest. With respect to the sanguine or plethoric, it has been found that this temperament does not predispose to apoplexy so much as has been generally supposed. The disease has been observed to be most common in persons of ordinary development, next to those in persons of thin, spare habit, *and last of all, in the plethoric and fat.* Rochoux's researches lead him to conclude that the number of persons of ordinary development, attacked by apoplexy, is three times that of

the plethoric, and that that of the spare habits is little more than twice as great as that of the fat and plethoric. If these researches are correct, they afford great consolation to stout gentlemen.

The conclusion, which has been come to, with respect to temperaments as bearing on the liability to apoplexy, appears to be true; namely, that there is no sign appreciable by the senses which will unequivocally point out a predisposition to apoplexy. This is of great importance in a practical point of view. You may expect the disease in the fair or dark haired, the thin or fat, alike. The frequent occurrence of this disease in persons who were never suspected to have any predisposition to it is another proof in favour of this opinion.—*Ibid, August 2d*, 1834.

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10. *Diagnosis of Apoplexy.* By WILLIAM STOKES, M. D.—With respect to the mere medical diagnosis of apoplectic effusion, it would be well if, in making it, you would always bear in mind the anatomical characters of the disease. Extravasation of blood into the substance of the brain generally takes place by a tearing or separating of the cerebral tissue. A quantity of blood is rapidly effused, the substance of the brain torn, and a cavity formed. There can be no doubt that the tissue of the brain is torn, for we can see the loose shreds hanging on each side of the cavity, and mixed up with the clot. Now, what are the principles which should guide us in making our diagnosis? They are exactly the same as those in other diseases *connected with a sudden solution of continuity in the substance of internal organs.* We have, with or without any preceding symptoms of a different kind, the *sudden* supervention of new and remarkable phenomena. The phenomena which are the result of disease proceeding in its ordinary course are gradual and progressive; but occurrences of this kind are almost always characterized by sudden and well-defined symptoms. Thus, we make the diagnosis of the rupture of an aneurism of the aorta from the sudden vomiting or expectoration of blood, followed by the death of the patient. Here, you perceive, the diagnosis is founded on the *sudden* supervention of new symptoms. In the same way we may make the diagnosis of pneumothorax with a fistulous opening communicating with the bronchial tubes, and calculate from the sudden occurrence of pain in the side and the other signs of pneumothorax, that there has been a solution of continuity in the pleura. Again; if a person, labouring under hepatic abscess, is seized with a fit of coughing, and suddenly expectorates a quantity of pus, and that this is found to be accompanied by a subsidence of the tumour in the region of the liver, we make the diagnosis of perforation of the diaphragm and pleura, and the escape of the contents of the abscess into the substance of the lung. Or he may, under the same circumstances, be seized with sudden and rapid peritonitis, and here we make the diagnosis of an effusion into the peritoneum. It is on precisely the same principles that Louis has established the diagnosis of perforation of the small intestines in cases of gastro-enteritis. The patient is lying in bed, perhaps apparently improving; he is not exposed to any exciting cause, and every care may have been taken of him. *On a sudden* he exhibits symptoms of intense peritonitis, and rapidly dies. Any one conversant with such cases can easily make a correct diagnosis. On the same principles we found the diagnosis of apoplectic effusion. Almost all the instances of disease which I have given occur with a *sudden* violent invasion; and the same thing may be said of apoplexy with extravasation. It is true, that there are some cases which do not exhibit this character, but the general rule is suddenness of attack.

We may divide apoplectic attacks accompanied by extravasation into three great classes; and, if you look to the great majority of cases of this disease, you will find that, although they appear to pass by insensible degrees into one another, still, when taken and examined singly, there will be found a difference between them. This classification is that of Rostan, and I have known his principles verified in many instances. In the first class of cases, which are the worst and generally prove fatal, the extravasation is enormous. A person, apparently

in perfect health, will fall down in a fit of apoplexy, remain for a short time insensible and paralytic, and then die. In such a case as this, the ordinary pathological character is an enormous effusion of blood, or excessive congestion. In a case of the second class, we have an apoplectic seizure with coma, which disappears after some time, and the patient recovers his intelligence, *but with paralysis of one side.* The pathological character of this form is, that the effusion is more limited, and exists only on one side of the brain. Neither is the congestion so severe, and the patient recovers from the coma. In the third form, we have an attack of apoplexy of a milder description; there is scarcely any coma or loss of intelligence, and the paralysis is slight, generally affecting the muscles of one side of the face, or of one of the extremities. Let us repeat these varieties. In the first, which constitutes the *apoplexie foudroyante* of the French, there is an enormous extravasation of blood in both sides of the brain; or, if it be only on one side, the amount of the effusion is frequently such as to burst through the walls of the ventricles and get into their cavities, and in this way we may have an effusion of one side getting into the other hemisphere, or exercising such pressure on it as may give rise to *general* symptoms. Such a case as this is, I believe, generally fatal; its progress, too, is very rapid, several persons under such circumstances having died in the space of an hour, or less. In the second form, there is coma and loss of intelligence, and the patient recovers *with paralysis of one side.* Here the extravasation is never so great as in the foregoing case; the effused blood is confined to one side, and does not get into the ventricles. In the third form, the effusion is very much circumscribed, the signs of general congestion or extravasation are slight, the quantity of blood poured out is not, perhaps, larger than a nut, it is followed by partial paralysis, and there is little or no coma or loss of intelligence.

Let us take a brief review of the symptoms which attend each of these forms. In a case of the first description, we find a person, hitherto in the enjoyment of health, suddenly attacked with symptoms of intense apoplexy. You will recollect that in my last lecture I told you that apoplexy consisted in various lesions of the phenomena of the life of relation. In the most violent form of apoplexy, many authors are of opinion that there is a total paralysis in the functions of animal life. The patient falls down and remains in a state of complete insensibility, the eye no longer obeys the stimulus of light, no sound makes any impression on the ear, or odour on the sense of smelling, the sense of taste is destroyed, the skin may be now seared with a red hot iron without the slightest indication of suffering; in fact, sensation, one of the great phenomena of animal life, appears to be annihilated. If we examine farther, we find that there is a total suspension of the intellectual functions, and that the patient is unconscious of any thing passing around him. If we go to the muscular system, we find that all that part of it which subserves to the purposes of animal life is completely paralyzed. The neck, trunk, and extremities have lost their power; and, if you raise the head, trunk, or one of the limbs, they fall down like dead masses as soon as the support is withdrawn. In some cases there is a certain degree of rigidity in the muscular system, in others not. We may observe, also, that from the paralysis of the buccinators, the cheeks are alternately puffed out and sucked in during respiration. As far as my experience goes, I believe that this symptom is fatal. Here, then, we see that the great phenomena of the life of relation are suspended. The functions of organic life, however, still continue to be performed, the heart beats, respiration goes on, and the power of secretion remains; but, after some time, the functions of organic life are also suspended, and the patient dies. In some of these cases, we observe evident signs of determination of blood to the head, the face is swollen, and the lips livid; there is considerable turgescence of the vessels of the neck, with heat of the head, the skin hot, and the pulse full and strong. In other cases, however, we have a feeble pulse and a cold collapsed state of the surface.

Let us now turn for a moment to the pathology of this form of the disease. I

have already mentioned, that the extravasation sometimes occupies both hemispheres of the brain, or that it occurs on one side, and, by tearing through the substance of the brain, gets into the ventricles, and produces symptoms referable to a lesion of both sides. With respect to the simultaneous double effusion, the following is a short notice of some cases taken from the Clinique Médicale of M. Andral. A man, about 37 years of age, fell down near La Charité in a fit of apoplexy. He was immediately brought into the hospital, had prompt and careful attention paid to him, but without any effect; he lay in a state of profound coma, with complete suspension of the phenomena of animal life, and died in an honr and a half. On examination there was a double effusion of blood found in the brain, but it had not got into the ventricles. In another case, marked by simple intensity, there was an enormous effusion discovered in the substance of one hemisphere, which burst into the ventricle, tore through the septum lucidum, and passed into the ventricle of the opposite side. In the next case, no distinct trace of optic thalamus or corpus striatum could be seen, their substance being completely broken up and destroyed by the effusion. I have told you that, after a rupture of the substance of the brain and the escape of the effused blood into the ventricles, persons have not recovered, but it is a fact, and a consolatory one indeed, that a person may recover from a *simultaneous double effusion*. A case in proof of this is given by Andral. A female, who had been for some time a patient at La Charité, died of cancer of the stomach. The history of her case was, that nine years before she had an attack of apoplexy, had fallen down in a state of insensibility, and remained comatose for a considerable time, that this was followed by *paralysis of both sides of the body*, which continued for two years, after which she gradually recovered the use of her limbs. In this case, two serous cysts, such as are met with in cases where patients have recovered from apoplectic attacks, were found, one in each hemisphere of the brain. In another case, the subject of which died of visceral disease, the patient had twenty-two years before an attack of apoplexy with double paralysis, and recovered with the loss of the use of one side; here there were two cysts also found. It appears, then, that though extravasation, with rupture of the walls of the ventricles, and escape of blood into their cavities, always proves fatal, a recovery may take place after a simultaneous double effusion.

Let us now inquire briefly, whether an apoplectic attack, followed by paralysis of both sides of the body, gives sufficient grounds to enable us to make the diagnosis of either of these accidents. Does it follow, if a person has an attack of apoplexy, succeeded by paralysis of both sides, that the effused blood has burst into the ventricles, or that a simultaneous double effusion has occurred? Andral inclines to this opinion as far as I can collect. Dr. Abercrombie appears to differ from him, and gives cases in illustration of his opinions. The following is one:—A private of the 10th Hussars had been complaining for some time of a pain in the head, for which he was blistered, and the pain soon went off. On the 22d of July, 1819, he was seized with giddiness and fell down; on being raised, he vomited, and complained of violent head-ache and faintness, but was quite sensible. He was very pale, and his pulse slow and languid. He was brought into Hospital, where he asked for some cold water, made a few inspirations, and expired. From the moment of his last seizure he had been paralytic of both extremities. Here we have an attack resembling the first form of apoplexy, so far as complete loss of power in the upper and lower extremities is concerned; but observe, the *patient was not comatose and retained his faculties to the last.* On examination there was nothing found amiss with the brain, but, on removing the cerebellum, a coagulum to the amount of about two ounces was found under and surrounding the foramen magnum. Here the paralysis appears to have been produced by the pressure of the effused blood on the upper part of the spinal cord. This case is an interesting one. It appears that the injury done to the functions of the life of relation was partial, there was a lesion of the muscular function, but there was no coma, and

the intellectual faculties were unimpaired. As far then as a single case goes, we may come to the conclusion, that we are not to make the diagnosis of the first form of apoplexy, unless, in addition to the double paralysis, there are coma and loss of intelligence and sensation. The great points of diagnosis are coma, suspension of the phenomena of the mind, and paralysis of both sides of the body, both of motion and sensation. We now come to consider the symptoms of the second or milder form of the disease. A person falls down in a state of insensibility, but, when you come to examine him, you find that the coma is not so profound, nor is the paralysis and loss of sensation so complete. The eyes are to a certain degree susceptible of the impressions of light, signs of uneasiness are exhibited when strong pungent odours are applied to the nostrils, and indications of suffering are given if you pinch or burn the skin. All these circumstances prove, that the paralysis of sensation is by no means so complete in this as in the former case. You observe here, too, that instead of the cheeks being puffed out in the manner before described, there is only a partial paralysis of the muscles of the face, *and the mouth is drawn towards the sound side.* The patient, too, instead of dying in a comatose state, gradually regains his intelligence, and is only paralyzed on one side, or one extremity. All these circumstances point out that the injury done to the brain is not so extensive, and the occurrence of paralysis on one side shows that the effusion is limited to a single hemisphere of the brain. All this, too, is borne out by pathological anatomy, which shows us, in the first place, that the extent of the effusion is much less, that it exists only on one side of the brain, and never bursts into the ventricles. The general congestion of the head also is much less than in the former case. In the third form, the congestion and other symptoms are sometimes very slight. A person in health may feel a stunning sensation in the head, followed by some thickness of speech and drawing of the mouth to one side, or slight paralysis of one arm or hand, but he has no coma or loss of intelligence, and the paralysis quickly disappears. Every thing connected with the attack shows that it is very slight, the effusion is extremely limited, and this is confirmed by pathological anatomy.

I have now given you a brief sketch of the three varieties of apoplexy, between these you will meet with many intermediate cases.

Let us inquire how far does the circumstance of paralysis point out the occurrence of an extravasation of blood into the substance, or on the surface of the brain; that is, how far we can say that this patient has effusion, because he has become suddenly paralytic. It would appear, that the mere suddenness of the attack will not alone lead to the formation of a certain and accurate diagnosis. You will find in various authors many instances of affections of the head, not of an apoplectic character, in which there was sudden paralysis. Thus, for instance, there are many cases of tumours and encysted abscesses on record in which there was sudden paralysis, and where, if you should pronounce the disease to be apoplexy, you would be certainly wrong. We had lately at the Meath Hospital, a remarkable instance of this. A patient, who had been for a considerable time labouring under aneurism of the innominata, in the course of the night became suddenly hemiplegic. On examining the brain post mortem, there was a circumscribed abscess found in one of the hemispheres, but no sanguineous effusion. If you look to the works of Abercrombie, Rostan, Lallemand, &c., you will find many cases detailed in which sudden paralysis occurred from other causes than apoplexy.

But are there no circumstances, which, combined with the suddenness of the attack, would lead us to form the diagnosis of apoplexy? Now it would appear that, as a diagnostic of apoplectic effusion, *suddenness of paralysis* is only to be relied on where there have been no premonitory symptoms of a local disease of the brain. In the great majority of cases of cerebral abscess, you will find that pains and cramps in some of the limbs, and pain of the head in the situation of the abscess, have preceded for some time the paralytic attack. But if a person in health, without any of these cramps or pains, gets a *sudden* attack of apo-

plexy, and becomes hemiplegic, you may make the diagnosis of apoplectic effusion with tolerable certainty. The fact of the paralysis, occurring with an apoplectic seizure, renders it highly probable that the case is really one of the hæmorrhagic diseases of the brain. On the other hand, it is true that we may have apoplectic effusions ushered in by symptoms of irritation of the brain; as in the case of an apoplectic effusion occurring in the centre of a softening of the brain. The absence, therefore, of these premonitory symptoms appears to be necessary towards forming the diagnosis of simple apoplectic effusion.

In cases where absorption of the clot takes place, we cannot suppose that any inflammatory condition of the brain exists; on the contrary, we have every reason to believe that a non-inflammatory condition of the brain is highly favourable to this process, for whenever any thing of an opposite character happens, we find that it prevents absorption. But sometimes cases occur, in which, at an earlier or later period, inflammation is set up round the clot. Now, what happens in many of these cases? Here let me repeat, that there are many exceptions to the rules given for forming the diagnosis of diseases of the brain; the variety in the symptoms of cerebral affections being so great, that it is sometimes difficult to deduce from them rules of general application. In most cases we have apoplexy followed by paralysis with resolution; but, in cases where inflammation takes place round the clot, it has been observed that the paralyzed limb which had been previously in a state of resolution becomes contracted, and then we have paralysis with contraction. This contraction generally comes on in a gradual manner, but, when the case is severe, it is frequently ushered in by violent spasmodic action of the affected limbs. We have, then, the following order of phenomena: first, paralysis with resolution, and then paralysis with contraction. In circumscribed inflammation of the brain, the phenomena are the reverse of these; we have first, rigidity and contraction of the limbs, and then symptoms of apoplexy followed by paralysis with resolution.—*Ibid.*

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11. *Paralysis consequent on Apoplexy.* By William Stokes, M. D.—With respect to the paralysis which is consequent on an attack of apoplexy, there is the greatest possible variety. In some cases there seems to be paralysis of all, or almost all, of the muscles of animal life; in others, it affects only the muscles of one side of the body. A rare and extraordinary form of paralysis has been described by the French writers, who have given it the name of *paralysis croisée.* In this form of the disease, there is an affection of both sides, but not of the symmetrical members; we find the left arm and the right leg paralyzed, and *vice versâ.* This is an unusual form, in fact, the rarest to be met with in practice. We may also have great varieties in the amount of the paralysis; in some cases both sides being affected, in others only one, while in others there is only a single extremity or one side of the face paralyzed. We may also have complete paralysis of one side without any affection of the face. I remember a remarkable case of this kind, of which I shall give you an abstract. A gentleman, of stout muscular habit, and with a strong full pulse, had been suffering for a long time under an obstinate gouty affection. From a repetition of the gouty attacks he got a chronic swelled state of the lower extremities, which continued for some time, he being in other respects in the enjoyment of excellent health. The swelling, however, preventing him from taking his usual exercise, he applied for advice. Laced stockings were advised, the effect of which was, that the œdema subsided, and the motion of the lower extremities was restored. It is curious, that, between the period of the removal of the œdema and the paralytic attack which I am about to describe, this gentleman enjoyed excellent health. At the end of that time, on attempting to go over a step that led into the yard, he found he could not accomplish his purpose, and struck his foot against the stone. He immediately became alarmed and sat down, and soon after found that he had lost the power of using his arm. I saw him in a short time after the accident, and found that there was complete paralysis of the arm and leg, but no distortion of the face or tongue, or the slightest lesion of intelligence. He

continued in this state for some time, and then recovered, but it was necessary to take a large quantity of blood from him. In the first bleeding, as the pulse was full and bounding, I took sixty ounces of blood from the arm, and I think it was owing to the activity of the measures adopted, that he recovered so speedily. I mention the case merely to show that we may have paralysis of the leg and arm, without any affection of the face, or loss of intelligence. In some cases we find the paralysis affecting the tongue, face, and muscles of the eyelids; in some we have paralysis of the sphincter ani, or of the muscles of deglutition, or of the bladder, but these are rare, and the most ordinary form is paralysis of the muscles of one side, and distortion of the face. There is another circumstance, which seems to be so exceedingly frequent as to form a law, perhaps the most general of any in medicine, that paralysis occurs on the side of the body which is opposite to that on which the effusion occurs. If you have an effusion into the right hemisphere, you will have paralysis of the left side of the body, and, if the effusion be on the left side, the paralysis will be on the right. To this rule, however, it has been stated that there have been a few exceptions; how they have occurred it is totally impossible to explain, it is sufficient for us to know that such exceptions have been witnessed. Cases of this description have been very rarely seen since pathological anatomy has been studied with more diligence; it is, however, true, that a few have been detailed by men of great professional eminence. We want facts to throw light on this point, and, until this is accomplished, we must remain in ignorance of the cause of the anomaly. In the vast majority of instances, the paralysis is on the opposite side to that on which the effusion takes place, and this appears to be explained by the decussation of the fibres of the brain at the upper part of the spinal marrow, the fibres of the left side passing to the right, and *vice versâ*. It is an interesting fact connected with this subject, that the muscles of the face follow the same law as the muscles of the extremities, and yet it is a fact, as you are well aware, that the nerves which supply the muscles of the face come off before the decussation of the fibres of the brain takes place. The fifth nerve, which supplies the face with muscular branches, is given off at a considerable distance from the decussation of these fibres, and yet we perceive that the muscles, to which it is distributed, obey the same law as those which derive their nerves from the spinal cord. Now, if this decussation was the only cause of the paralytic symptoms being observed on the side opposite to that in which the effusion occurs, the muscles of the face should be an exception to this law, but we find that they correspond with other parts of the muscular system in this respect. Thus if a man gets an attack of apoplexy, followed by paralysis of the left arm, we find the left side of the face affected, and *vice versâ*. We must conclude from this, that the mere decussation of the fibres is not the sole cause of this peculiarity, and must look for an explanation elsewhere, by referring it to the intimate communication which exists between both sides of the brain by means of its commissures. Many persons are not familiar with the phenomena of the face and tongue in paralysis; they are, however, simple and easily explained. Let this diagram represent the head—here we have the right hemisphere of the brain, here the left. Now, suppose you have an apoplectic effusion in the right hemisphere, the consequence is, that you have paralysis of the left side of the body, according to the law already mentioned. What will then happen with respect to the face is, that the muscles of the left side being paralyzed, and their antagonism being destroyed, the mouth is drawn by the sound muscles of the opposite side from the paralyzed side, and this is invariably the case. Recollect then that the mouth is always drawn from the paralyzed side, and towards that side where the disease exists in the brain. But when you desire the patient to put out his tongue, do you find that the tongue follows the direction of the mouth? No; it goes towards the opposite side. This appears somewhat paradoxical at first, but is easily explained. The protrusion of the tongue is effected by the action of the genio-hyo-glossi muscles, which are, as you all know, a pair of fan-shaped muscles, attached to the inside of the

chin, the middle line of the tongue, and the body of the os hyoides. This diagram will represent it. Here is the muscle of the left side, and here is the right. When the patient puts out his tongue, this left half being paralyzed, and having lost its antagonism, the tongue obeys the action of this, the right half, and the fixed point of attachment of the muscle being to the right of the mesial line, the base of the tongue is brought forward, and to the right, and its point consequently deviates to the left or paralyzed side. It has been remarked also, that there is some variety with respect to the paralysis of the tongue; some patients can protrude it, others cannot. In some cases too, the patient can put out his tongue well enough, but he cannot employ it in the articulation of sounds, and his speech is quite indistinct.

With respect to paralysis of the extremities, the upper are paralyzed more frequently than the lower; and, when both extremities are engaged, the upper are generally more completely affected than the lower. When a person recovers, also, we find that the lower extremities are the first to regain their lost power and sensibility. These circumstances have been attempted to be explained by considering the particular parts of the brain in which the effusion has occurred; but, as this has not as yet been sufficiently made out, I shall pass it over. I regret, also, that I have not time to enter into the subject of the different varieties of lesion of intelligence in cases of apoplexy. I must, however, observe, that the varieties are infinite, and your trouble will be amply repaid by reading what has been written on this point by Dr. Abercrombie, and Dr. Cooke in his Treatise on Nervous Diseases. You will find in the latter work an extraordinary collection of facts with respect to lesions of the intellectual functions.—*Ibid, August 9th*, 1834.

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12. *Paralysis from disease of the Arterial System.* By WILLIAM STOKES, M. D.—I wish to call your attention to a remarkable form of paralysis, in which the disease appears, as far as we can see, not to depend on any primary lesion of the *nervous system*. In this form we have a paralysis, not the result of any disease of the brain or nerves, but connected with an affection of the vessels of the part. This is a very singular disease, and I am anxious you should be acquainted with it, for I believe it is by no means so rare as many persons think. The other point to which I would direct your attention refers to the influence of magnetism on the human body; of this I shall speak on a future occasion, confining myself for the present to that form of paralysis which is connected with disease of the *vascular system*.

So as to give you some idea of this affection I think I cannot do better than read for you the notes of a case of it, published by Dr. Graves and myself in the fifth volume of the Dublin Hospital Reports.

A man, aged 44 years, was attacked in December, 1828, with alternating sensations of cold and burning heat in the toes of the right foot. These extended to the leg, of which the power became diminished. Pains in the foot next occurred, and in a month the part became cold and wholly deprived of sensation.

On the day of his admission the pain suddenly extended to the calf of the leg; and from this time he lost all power of motion in the leg. On admission the temperature of the body, with the exception of the affected limb, was natural. The pain had extended to the thigh during the night. The temperature of the limb was but 58° of Fahrenheit. Slight œdema existed about the ankle. There was complete loss of sensation from the middle of the thigh to the toes; the patient could rotate the thigh slightly, but there was no other voluntary motion possible. The femoral artery appeared like a hard cord, painful on pressure, and without pulsation. By the stethoscope we found that pulsation was also wanting in the common iliac on this side, while that of the left iliac was plainly perceptible. The patient died on the fourth day after admission, the limb having become purple, tender, and covered with vesications.

On dissection, the right common iliac appeared distended and livid, and was

completely plugged up by a dark clot, extending to the external and internal iliacs, and engaging the gluteal and obturator arteries. The same occurred in the femoral and profunda, and extended as far as they could be traced, to the tibial arteries, and to the peroneal. The lining membrane of these vessels was soft, villous, and red; the clot in some places being separated from it by a layer of puriform matter. No disease in the veins. A large portion of the vasti and and rectus muscles was *white* and hardened. Here you perceive a train of symptoms, some of which might be referred to disease of the brain, if the man had any cerebral symptoms, which was not the case, for his intellect was sound, and he had no evidence of cerebral disease except the paralysis.

His constitutional symptoms were emaciation, prostration of strength, and loss of appetite. The temperature of the body was natural, but, on examining the limb, we found, (and this is a point of great importance,) that it was as low as 58° of Fahrenheit; in fact, it was quite cold. There was also complete loss of sensation from the middle of the thigh to the toes, and though he could rotate the limb slightly, it was, in all other respects, powerless. Here we have paralysis of motion and sensation in one of the extremities, *with remarkable coldness of the limb.* On making an examination along the track of the femoral artery, we found that it was painful on pressure, *without any pulsation*, and conveying to the finger the feel of a piece of hard cord. From a consideration of those circumstances, we came to the conclusion that it was not pervious, and that this would account for the state of the limb. In this case, also, we made another remark, and this, I believe, is the only instance on record in which such a diagnosis was made. Up as high as the groin, the pulsation of the femoral artery could not be felt, and we were anxious to ascertain how far farther the disease extended. The state of the femoral artery in the left groin was natural. On making an examination with the stethoscope, we found that the pulsations of the aorta were perceptible down to its bifurcation, but when the stethoscope was applied below this on either side, we observed that there was no pulsation in the right common iliac artery, but on the left side it could be traced distinctly down to the groin. Here then we had a train of phenomena, such as ordinarily occur in paralysis affecting the right lower extremity, and along with this an obstruction to the circulation in the thigh and leg. From these circumstances we made the diagnosis of obstruction of the right iliac and femoral arteries. On dissection we found that the aorta was healthy to within about six inches of its bifurcation; below this point it was partly filled by a red clot. The left common iliac was healthy, but the right was plugged up with a dark red clot, which extended into the internal iliac and obturator arteries, filling up also the femoral and its branches. The case, in fact, was nothing more or less than one of chronic arteritis.

This remarkable form of disease has been also observed by other authors. You will see in Rostan's work on the softening of the brain the reports of two cases of this disease, occurring in patients of extremely advanced age. In one, there was complete paralysis of the right arm, which was cold and livid. The fingers were threatened with gangrene, and no pulsation could be felt in the radial artery. By stimulating frictions a certain degree of warmth and motion was restored, and it was even thought that pulsation could be perceived. By degrees the power of the left arm of the lower extremities began to fail, with diminution of the force of the pulsation. On dissection, extensive disease of the arteries was found; the right brachial, at the insertion of the deltoid, was obliterated by a mass of fibrin, below which the vessel was contracted and closed; the left brachial artery was also narrowed, but without any clot; and this condition was farther met with in the crural vessels. The cerebral arteries and the aorta was diseased. In the second case, the patient, aged eighty, was attacked with violent pains in the left leg, which became cold and bluish. There was no lesion of intelligence, and the corresponding arm was unaffected. In fifteen days, the pains having augmented, a certain degree of paralysis supervened, which, however, was never complete. On dissection, (the disease having lasted

a month,) the crural artery was found extensively obliterated by a fibrinous clot. Here you observe, gentlemen, that, notwithstanding the great age of both patients, the disease was not *ossification*, but, in all probability, *arteritis*.

In persons advanced in life, the arteries are also frequently obstructed by the formation of ossific deposits within them, producing loss of power, coldness, and diminution of sensation. A similar fact may occur from the pressure of an adjoining tumour on the trunk of a principal artery.—*Ibid, Sept. 6th and 13th*, 1834.

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13. *Diagnosis of Paralysis from disease of the Arterial System.* By William Stokes, M. D.—Paralysis resulting from disease of the arterial system, is distinguished from paralysis caused by cerebral disease, by the following marks: first, by the colour of the integuments of the affected limb, which, in a case of the former description, are generally of a violet hue, or of a much deeper tinge than in the latter case, or in a state of health. It is very rare to find the two limbs of the same colour, as we do in cases of cerebral paralysis. Another mark is, that the temperature of the limb is always lower than that of the healthy one; but the distinctive sign of this form of paralysis *is the absence of pulsation in the arteries in parts where it should be naturally observed.* If to this description you join the absence of cerebral symptoms, you will seldom fail in making a correct diagnosis. I have had two cases of this disease under my care; one of them occurred in the upper, the other in the lower extremity, and, from observing the characteristic marks already detailed, I had no difficulty in making the diagnosis.

The subject of this last case is a gentleman who has been for the last four or five years labouring under paralysis of the lower extremities unaccompanied by any symptoms indicating disease of the brain. His intellect remains not only unimpaired, but in a state of high activity; and, what is equally singular, he has had none of the usual symptoms of disease of the vertebræ or spinal cord. His limbs, however, are quite powerless, and are of an *icy coldness*, and yet you will hardly believe me when I tell you that I have repeatedly felt the femoral, popliteal, and even the anterior tibial arteries pulsating distinctly! This is a singular fact, but I have verified it by a number of observations. You will perceive, then, that in taking a remarkably diminished temperature as a diagnostic of paralysis from arterial obstruction, we must admit that as a sign it is only valuable *when combined with absence of arterial pulsation.* In this case, the fact of such extreme coldness of the lower extremities at the same time that their circulation continues with undiminished activity, becomes of great importance, as tending to prove that the temperature of the body depends more upon the state of innervation than on arterial action. There are, indeed, many facts which go to prove that animal heat is more closely connected with the nervous system than with the circulating.

It is to that peculiar form of this disease, which is considered by some authors to depend on ossification of the arteries, that the name of "Pott's Gangrene" has been applied. A great deal of light has been thrown on this disease by the researches of modern pathology. It is now pretty well-established, that we may have this gangrene, not only in old persons from ossification of the arteries, but also in the young from arteritis. In truth, the pathology of Pott's gangrene appears to be of one or two changes,—either an arteritis or ossification of the arteries themselves; and of these two causes the first is by far the most frequent. You will see at once the importance of this view of the question, for if the gangrene occurs in a young person, and is connected with inflammation of the arteries, it is a disease more or less under the controul of medical treatment; but if it be produced by ossification of the arteries, the results of treatment are far less likely to be successful.

We have, then, in a case of paralysis of this description, more or less loss of sensation and motion, coldness of the limb, and absence of arterial pulsation. With respect to coldness, it may be said that it is of little value as a sign, being frequently observed in cases of cerebral paralysis. To this it may be replied,

that though coldness is sometimes present in cases of ordinary paralysis, still it is never so remarkable as in this form of the disease, and the temperature of the limb is but a few degrees below the standard of health. Dr. Abercrombie makes a very interesting conjecture on this subject. He says, the temperature of paralyzed limbs is generally considered to be lower than that of the healthy ones, and, indeed, such is the case; but the true explanation of this occurrence is, that in this condition the limb loses its power of preserving a medium temperature, and hence it is that, according to the temperature to which it has been exposed, it becomes hotter or colder than the healthy limb. A case is mentioned of a medical man who laboured under paralysis of one of the upper extremities. This gentleman, on one occasion, after having applied some warm bran to the paralyzed limb, was astonished to find, on touching it with the sound hand, that he could not bear the heat, though he was at the same time unconscious of any increase of temperature in the paralytic extremity.

The symptoms, then, of this form of paralysis, are diminution or abolition of sensation and the power of motion, a dark or violet hue of the skin, remarkable coldness, and absence of pulsation in the arterial trunks which supply the affected limb. These, with a tendency to the formation of gangrene, are the characteristic marks of the disease, and, by bearing them in mind, you will seldom err in making a diagnosis. In the great majority of cases the disease is confined to one extremity; but Rostan gives some cases in which it was more general. We might also add to the diagnosis, that paralysis connected with disease of the brain often comes on suddenly, while, in this case, its invasion is slow and gradual. It is, however, true, that some cases of paralysis, depending on this cause, have come on so suddenly, as to render this circumstance of less value as a diagnostic.—*Ibid, Sept. 6th and 13th,* 1834.

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14. *On Paraplegia.* By William Stokes, M. D.—Before I leave the subject of paralysis, I wish to draw your attention to one more form of the disease by no means uncommon; I allude to that in which *both* the lower extremities are exclusively engaged. This is a disease or symptom which may arise from a great number of causes, and be observed under a variety of circumstances. Generally speaking, however, it will, in almost every instance, be found to depend on some cause which engages the spinal marrow, either primarily or secondarily. I believe that this paraplegia, as the result of disease of the brain, is never met with except in combination with paralysis of the upper extremities. General paralysis may be produced by cerebral disease, and in describing the various forms of paralysis which depend on disease of the brain, this form has been particularly noticed, but when paralysis of the lower extremities *alone* occurs, it is generally the result of some lesion of the spinal marrow, either organic or functional, below the situation in which the brachial nerves are given off. Among the causes by which this paraplegia is produced, the following are the principal: inflammations of the membranous coverings of the spinal cord with effusion of lymph or serum; spinal apoplexy; ramollissement from inflammation of its substance; pressure on the cord, by solid tumours from a variety of causes; the bursting of abscesses or aneurismal swellings into the vertebral canal as occurs in some cases of aneurism of the abdominal aorta. Thus during the progress of a case of this description, it has been observed that the patient suddenly became paraplegic, and, on examination after death, a quantity of blood which escaped from the aneurismal tumour has been found compressing the spinal marrow. Lastly, recent investigations have established the fact that we may have paralysis of the lower extremities, and yet on dissection *we cannot detect any traces of disease in the bones of the vertebral canal, or in the membranes or substance of the spinal cord.* Hence, gentlemen, you see how cautious you should be in making the diagnosis, so common among surgeons, of caries of the vertebræ, in cases of paralysis of the lower extremities. The truth is, that in the present state of medicine on this subject, we labour under very great difficulties; the diagnosis of these affections is exceedingly obscure; it is a subject

still open to investigation, and I need not remark that it is one of paramount importance.

Paraplegia is one of the most miserable diseases to which the human body is liable. It is almost always obstinate and unmanageable, and in the majority of cases incurable. How far the fatality of the disease depends upon the want of an accurate diagnosis, and a correct plan of treatment, must be determined by future observations, but it is a fact that a vast proportion of paraplegic patients die, and under the most melancholy circumstances. In many cases the formation of gangrenous sores on the back and loins is a common occurrence. For this there are two reasons; first, the vessels of those parts exposed to pressure from position fall into that state which Andral terms *mechanical hyperæmia*, the result of which is that they are unable to unload themselves, a stasis of blood follows, and this leads to mortification of the part; secondly, there is a lesion of innervation. Hence it is that the great majority of patients of this kind die with gangrenous sores on the back and loins. They have also most constantly paralysis of the bladder or its sphincter, or both, producing retention of urine, or retention with incontinence, or stillicidium urinæ. The sphincter ani, too, is generally paralyzed, and we have a most melancholy and disgusting source of annoyance. The frequent passing of urine and fæces keeps the unfortunate sufferer in a state at once pitiable and loathsome, and when, in addition to his other calamities, the gangrenous sores form, the supervention of low diffused erysipelatous inflammation may prove fatal; or he may be carried off with symptoms of typhus fever from the absorption of putrid matter.

While on the subject of paraplegia, I am anxious to lay before you a sketch of some important opinions lately put forward by Mr. Stanley, of London. In the last number of the Medico-Chirurgical Transactions, this gentleman has written a most interesting paper, in which he gives the history of several cases of paraplegia, the majority of which were supposed to be examples of caries of the vertebræ, but in which, on dissection, no disease could be discovered, either in the bones of the vertebral canal, or in the membranes or substance of the spinal cord. You will ask, were there no pathological phenomena in these cases? There were, but they belonged not to the spine or its contents, but to an organ in its immediate vicinity—the kidney. From a candid review of Mr. Stanley's cases, there appears to be reason to believe that disease of the kidneys may produce all those symptoms which have been attributed to lesions of the spinal marrow, or caries of the vertebræ. In the four first cases, the symptoms given as of caries of the vertebræ were present, and the cases treated as such. On dissection, no caries, or disease of the cord, could be discovered in any of them, but the kidneys were found to be the seat of extensive disease. The fifth case was a remarkable one: the patient had been admitted for retention of urine, the consequence of severe gonorrhœa, which had been checked by injections. The bladder and sphincter ani became paralytic, and he lost the power of the lower extremities to a certain degree. He also complained of severe pain at the fifth lumbar vertebra. He distinctly traced the pain from the bladder to the left kidney, and then to the right. Paralysis of motion, and, nearly, completely of sensation of the lower limbs, next supervened, and in about a fortnight he died. On dissection, the kidneys were found in a state of inflammatory softening, and with numerous depositions of pus. The bladder was inflamed, but the brain and spinal cord were perfectly healthy. In the sixth case, a patient, while in progress of cure of a gonorrhœa with phymosis, was suddenly seized with paraplegia. The functions of the brain were unaffected. He had suffered for a day or two from pain in the loins. Sixteen hours after this attack, he suddenly died.

From considering the former cases, Mr. Stanley predicted that inflammation would be found in the kidneys. A slight turgescence of the vessels of the cord, with a little transparent effusion in the theca, were found, but the kidneys were in a state of the most intense engorgement. In this case, it was remarkable that from the period of the paraplegia, there was an inordinate se-

cretion of urine. The seventh case was that of a patient who, for two years, had been labouring under pain of the back, increased by pressure, and incontinence of urine. On dissection there was some vascularity and effusion of the cord, but both the kidneys were almost entirely destroyed by disease. In addition to these, Mr Stanley mentions four more cases, which were seen by a friend of his, Mr. Hunt, of Dartmouth, which corroborates his opinions.

Here, then, we may have well-marked paraplegia without any perceptible organic change in the spinal cord or its investments, but presenting distinct traces of disease of the kidneys. This leads us to observe the very close connexion which exists between the kidneys and spinal cord, a connexion which has been long recognised by medical practitioners, but only in a limited point of view, for though they were of opinion that disease of the kidneys, and a discharge of ammoniacal urine, were the results of spinal disease, they never seem to have reflected that the reverse of this might happen. It seems now, however, to be almost completely established, that disease of the kidneys may produce symptoms which are referable to disease of the spine; and Mr. Stanley has the credit of having been the first who directed the attention of the profession to this circumstance, and his paper must be considered as one of the most important, and practically useful, which has appeared for a length of time. You should all peruse it carefully. The fact that disease of the spine will give rise to affections of the kidney, is long known, and has been proved by numerous experiments. Thus Ollivier details the experiments of a German physiologist, M. Kreimer, who, by dividing the lower part of the spinal cord in animals, made the urine ammoniacal. You will also find in Dr. Prout's work, that an ammoniacal state of the urine may be rapidly brought on by injuries of the back from falls or bruises on the spine. It is indeed singular how quickly those profound functional lesions of the kidneys supervene on injuries of the spine, sometimes appearing in four or five days, sometimes sooner. Medical men have hitherto been in the habit of looking at this matter only in one point of view; they know that disease of the spine will produce disease of the kidneys, and here they stop; but it has been shown that the reverse of this may happen, and that renal disease may produce very remarkable lesions in the functions of the spine. Of this very curious occurrence we have many analogies in pathology. Thus, for instance, in several cases of cerebral disease, but chiefly in hydrocephalus, we have vomiting; here we have functional disease of the stomach depending on an affection of the brain. Take the reverse of this,—observe the delirium which attends a case of gastro-enteritis,—here you have the functions of the brain deranged in a most remarkable manner, and this produced by sympathy with an inflamed mucous membrane. The truth is, that in the spine and kidney, as well as in various other parts of the system, we have two organs which are so closely connected by sympathy, that disease of one will bring on serious functional lesion of the other.

Observe then, gentlemen, the great importance of these inquiries. When you meet with a case of paraplegia, you are not at once to conclude that it depends on disease of the spine or caries of the vertebræ. You must carefully investigate its history, and ascertain whether it may be referred to either of these causes, or whether it may not rather depend on disease of the kidneys. That it may depend on the latter cause is now established, for the cases are too numerous for us to suppose the complication accidental. You will observe the importance of making an accurate diagnosis when you consider that this point will most materially influence your treatment. In the one case, your treatment will be directed to the bones and cartilages of the spine; in the next, to the spinal cord itself; and, lastly, to the kidney, a parenchymatous organ, to which there is a great determination of blood. No one will venture to assert that the principles of treatment in each of these cases are the same; and the chances are, that, if you do not make a correct diagnosis, you will practise improperly, and without success. I have now seen a number of these cases, but there were only two of this description in which I was fortunate enough to ob-

tain a post mortem examination. I cannot say that my dissection exhibited remarkable disease of the kidneys, (they were large and very vascular,) but, from the many points of resemblance they bore to Mr. Stanley's cases, I was led to conclude, that if they were not examples of actual chronic disease of the kidney, they were cases of lesion of function in the spine, unaccompanied by any organic change to account for the symptoms. I shall briefly detail these cases;—the first was that of an unfortunate man from the country, who was discovered by two friends of mine under peculiar circumstances. While on an excursion they were requested to visit a poor man who was lying ill at a remote farm-house. They heard he had been labouring under a dropsical affection for a long time, and had been treated for ascites. On arriving at the cottage, they found the man lying in bed, with his abdomen very much enlarged; and, on farther investigation, discovered that he was quite paralytic of the lower extremities. On examining the belly more particularly, they found that the swelling was produced, not by ascites, but by *an enormously distended bladder*. He had also stillicidium urinæ, with paralysis of the bladder; and this having been mistaken by the medical practitioner who attended him for suppression of urine he had prescribed diuretics, and continued this plan of treatment for some weeks, totally overlooking the paralysis of the bladder. As little or nothing could be done for him in the remote situation in which he lived, it was determined to send him up by easy stages to Dublin, and procure him admission at one of the public hospitals. On his arrival he was received at the Meath Hospital; and when I visited the wards next day, I found that he was quite paralytic of both lower extremities, that the bladder was in the state above described, and that his health had suffered considerably, and that bed-sores had formed on his back, and were increased by his journey. I prescribed cupping and blistering, which were productive of some slight relief, but in the space of a few days he began to exhibit symptoms of low typhus, as if from the absorption of pus, and sank rapidly. On examining his body, we could not detect any traces of disease in the bones or cartilages of the spine; neither did the cord, or its membranes present any marks of organic lesion, except that towards its lower portion, where it begins to spread out into the cauda equina, it was perhaps a little softer than natural. I regret very much that I did not note the circumstances of this case more fully; but, as far as my recollection of it goes, the general features were as I have just mentioned. I had another case some time since in the Meath Hospital, in which the following circumstances were observed:—The patient, a labouring man, generally employed about the quays, was brought into the hospital with paraplegia of some standing. The first symptom in his case belonged not to the spine, but to the urinary system; he had had an attack of gonorrhœa, for which he had used stimulants and balsams; and, in some weeks after, without any injnry to the spine, he lost the use of his lower extremities. During his stay in the hospital the urine was intensely ammoniacal. On examining his body after death, we could not discover any disease of the bones or spinal marrow. A layer of substance resembling fat or organized lymph was found lying on the theca of the spinal marrow, but it was so very small as to be scarcely sufficient to account for the symptoms. The kidneys were pale, flabby, and without any vascularity, but did not present any marked traces of organic lesion.

Here, then, gentlemen, were two cases which, before the publication of Mr. Stanley's paper, would be considered as examples of organic disease of the spinal cord or its investments; and yet, on dissection, we can find nothing to establish this opinion; and, in the last one, the first affection was of the urinary system.

Is it possible that a *functional* disease of the urinary system may produce also a *functional* disease of the spinal cord?

With respect to the diagnosis of caries of the spine, I wish to make a few observations. The diagnosis where there is distortion of the spine, is extremely easy, but this does not hold where the caries is accompanied by distortion. Let

us inquire—are there any circumstances which would enable us to arrive at the diagnosis of caries without distortion? One symptom, not observed, as far as I can see, in paralysis *connected with disease of the kidney* is, that the patient feels exquisite pain on motion. This is an exceedingly common symptom in caries of the vertebræ, but I am not aware that it occurs in cases where the disease is situated in the kidney or the spinal cord itself. There is another remarkable circumstance:—When the patient attempts to move, he often feels a cracking sensation in the affected portion of the spine; and this has not only been observed by the patient himself, but is also perceptible to his medical attendants. When this occurs, it may, I think, be looked on as a diagnostic symptom. The exquisite pain on motion, the tenderness of the spine on pressure and the crackling sensation,—these might be sufficient to make the diagnosis of caries of the vertebræ, even in cases where there was no distortion. But if you had a case of paralysis of motion and sensation of the lower extremities, and if these symptoms came on without any injury of the spine, if there was little or no tenderness on pressure, if the patient felt scarcely any pain in turning or moving, and if he had at the same time symptoms of disease of the kidney or bladder, and ammoniacal urine, under these circumstances the great probability would be, that it was not a case of caries of the vertebræ, or original disease of the spinal cord or its investments, but a lesion of function of the spine, connected with organic or functional derangement of the kidneys. It must be acknowledged, however, that the diagnosis of this affection is rather obscure. The circumstances which I have just mentioned might enable you to get rid of the opinion that it was caries of the vertebræ or organic disease of the spinal cord, and that it was probably such a case as Mr. Stanley has described; and if you could arrive at this diagnosis at an early period of the case, it would be a matter of great importance. By doing this you would then be aware that you had to deal with an inflammatory affection of a highly vascular organ; you would not be led away from the real state of the case, or waste time in treatment calculated to stimulate the spine, or remove disease of the vertebræ. Your plan would be simple, and your treatment defined, and all your efforts would be directed towards removing the disease of the kidneys. You will easily perceive, gentlemen, that diagnosis is here of vast importance; unfortunately, it is still involved in obscurity.

The prognosis of cases of paraplegia, when once complete paralysis is established, should be always unfavourable. The fact of paralysis occurring, is sufficient in itself to prove the existence of extensive disease in most cases. There may be, however, some cases susceptible of cure, and this particularly occurs in young females, in whom a perfect cure has been frequently accomplished by the use of stimulant embrocations to the loins. I have seen one case of this kind, in which the patient was paraplegic for a year and a half, cured by the application of hot oil of turpentine over the lower part of the spine. Simple as the treatment may appear in this case, its success was rapid and complete. Mr. Crampton has mentioned to me the particulars of another case, in which the patient's limbs were quite rigid, and could not be moved without great difficulty; in this case, complete relief was obtained by applying Pearson's liniment over the lower part of the spine. This liniment produced powerful counter-irritation, and an eruption of bullæ over the body, which were speedily followed by relief. The patient is now in the enjoyment of perfect health, and since the period of her cure, which is now better than six years ago, has had no return of the disease.—*Ibid, Sept. 13th*, 1834.

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15. *Symptoms of Cerebritis.* By William Stokes, M. D.—There is much error prevailing with respect to inflammation of the brain and its membranes. Persons are in the habit of supposing that the symptoms of this affection are constant and well-marked, whereas the truth is, they are subject to very great varieties.

The first symptom to which I shall call your attention is *pain*. This, you

will recollect, is a prominent symptom of most visceral inflammations where the disease is situated on, or close to, the surface of the organ, but when it is deep-seated this symptom becomes more or less obscure. Now, in a case of arachnitis, we have a double source of pain, one depending upon the affections of the serous membrane, the other arising from the circumstance of disease being situated on the surface; and hence it is, that, in the great majority of cases of arachnitis, pain is a constant and prominent symptom. Still, if you were to conclude that pain is *always* present in arachnitis, you would be wrong, for there are many cases on record in which it was either partially observed or completely absent. You will be greatly assisted in your pathological studies by attending to the different results of inflammation of analogous structures, for we find that in some of the inflammatory affections of serous membranes there is little or no pain. We may, for instance, have pleuritis, pericarditis, and even peritoneal inflammation latent, so far as pain is concerned; nay, many persons have gone so far as to say, that it is only where the muscular tissues of the belly are engaged that we have pain in peritonitis. I have seen pericarditis run through all its stages without any pain being complained of by the patient. Now, if this absence of pain be a matter of no unusual occurrence in some inflammatory affections of the pleura, pericardium and peritoneum, there is no reason why it may not occur in some cases of arachnitis. Still, it must be acknowledged, that pain is one of the most remarkable and constant symptoms of arachnitis, and that, of all the serous membranes, the arachnoid seems to be endowed with the greatest sensibility.

We might inquire here, whether the pain of cerebral inflammation be significant of any particular lesion of the brain. I believe that upon this point the state of our knowledge is very unsatisfactory. Pain, as a symptom of cerebral inflammation, occurs in very different cases. We may have it in connexion with disease of the superior, lateral, or inferior parts of the brain; we may have it in cases where the result of the disease is a serous, hæmorrhagic, or purulent effusion. The rule, then, to be borne in mind is this:—first, that it is present in the great majority of cases of arachnitis; next, that it may accompany many different lesions; thirdly, that it may be absent; and lastly, that with the same lesions we may have pain in one case, and absence of it in the other.

The next subject for inquiry is, does the seat of pain generally point out the seat of inflammation? Andral distinctly affirms that it does not. In some cases, pain of the frontal region has been found to accompany disease of the ventricles, and pain in *one side* of the head, an affection of the arachnoid covering of both hemispheres. We see the same thing occurring in the case of other serous membranes. Thus, in the pleuritic inflammation of phthisis, pain is very seldom felt in the situation of the disease, but generally lower down, and I have seen some cases in which pain has been complained of only in the sound side. I recollect a case of very extensive pneumonia, in which the patient complained only of some pain in the region of the kidney and small of the back.

The pain which accompanies arachnitis, generally sets in at an early period of the disease, and is characterized by great intensity, two circumstances in which it resembles the pain of pleuritis. In most cases, it is found that any thing that impedes or oppresses the circulation of the brain, increases this pain; and hence it is that some practitioners are led to think, that if pain of the head be relieved by pressure, it cannot be inflammatory. Now, I wish to call your attention to this point, because, in some cases where evident marks of arachnitis were found after death, it was observed that during life the pain of the head was relieved by pressure. The patients have been found with a bandage tied firmly round the head, from which they experienced decided relief, and yet a post mortem examination gave unequivocal proof of the existence of arachnitis. So far, then, as these cases go, it appears that the mere fact of pain being relieved by pressure does not prove that it is unconnected with an inflammatory cause. The pain, too, of an arachnitis may be intermittent, and

continue to exhibit this character even for a considerable length of time. I have seen many instances of this in children, where the little patient was seized with acute pain of the head at a particular time of the day, which after a few hours' duration, subsided, and then returned again the next day at precisely the same hour, and continued in this way for several weeks, until at length his friends were surprised by the unexpected supervention of coma, convulsions, or blindness. I knew two cases of this kind in which the intermittent character of the pain was so prominent as to engross the practitioner's whole attention, so that the real nature of the affection was overlooked, and bark prescribed. I have now witnessed three or four of these regular quotidian attacks of pain in children, which after continuing for days and even weeks were suddenly followed by perfect blindness, in some cases with, and in others without coma.

You might here ask, whether pain is to be considered as a diagnostic of arachnitis? I cannot say it is. We constantly meet with severe pain of the head without arachnitis, and every one knows that the head-ache of fever is by no means an indication of inflammation of the brain. In many cases of hysteria, the head-ache and determination of blood to the head are violent, and yet unconnected with inflammatory action. I know a young lady who is frequently attacked with the most agonizing head-ache, accompanied by violent throbbing of the carotids and great heat of the face and scalp. Yet in this case it is plain that the pain cannot be inflammatory, for she has been subject to these attacks once or twice a week for the last six years, and yet continues otherwise in a state of good health. If her disease were to be measured by the violence of the pain and determination of blood to the head, it would be natural to expect that death would have long ago put a period to her sufferings. This is another proof of the truth of the opinion, that there is no single pathognomonic symptom of disease. Bear this in mind. I might go farther, and say, that whether we looked to symptoms or signs, the rule was the same. The man who merely looks to a single sign or symptom will frequently err; it is only from the whole group of signs and symptoms presented by a disease that we can arrive at any accurate diagnosis.

The state of the eye, in cases of arachnitis particularly, has attracted much attention. On this subject much valuable information has been obtained by the laborious investigations of Andral, of which I shall give an abstract. He states that the phenomena of the eye, in cases of cerebral inflammation, may be reduced to three classes; its motions, the various conditions of the pupil, and the state of vision. With respect to the first of these, it may be observed that in some cases we find the eyeball in constant motion, in others it is quite fixed, while in others the balance of muscular power is lost, and there is a constant tendency to strabismus of one eye or both. Of all these varieties in the state of motion, the last appears to be the most valuable so far as the diagnosis of arachnitis is concerned. By many persons this strabismus is looked upon as a sign that *effusion* has taken place, and that the disease has reached its incurable stage; a position which I am inclined to doubt, from having seen cases recover in which this symptom was present. However, Andral looks upon strabismus as a very valuable sign, and thinks that of all the lesions of motion of the eye it is the most important with respect to the diagnosis of *arachnitis of the ventricles.* With respect to the condition of the pupil, it is stated in books that in the early stage you have a contracted, and in the advanced a dilated pupil, and that the latter condition signifies that effusion into the brain has taken place. Now the truth is, that this statement must be received with great caution, and as admitting of numerous exceptions, for it has been established that the same lesions of the brain are sometimes accompanied by very different conditions of the pupil, and *vice versâ.* Parent and Martinet, who have investigated the subject carefully, are the best authorities on this point, and I shall give a brief abstract of their experience. In cases where *both pupils were dilated,* they observed that in some there was effusion into one of the ventricles, in others

into both. In cases where there was no dilatation, they observed that in some there was serous or purulent effusion under the arachnoid; while in others, in which there was no effusion whatever, the pupil was dilated. Lastly, it was found that in some cases, where only one pupil was dilated, there was effusions *into both sides of the brain.* You might here ask, whether effusion into the substance or on the surface of one side of the brain is connected with a dilated condition of the pupil? In reply to this, it may be stated, that effusion into the substance not of one, but of both hemispheres, has been known to be accompanied by a contracted state of the pupil to the last. You may also have one pupil contracted and the other dilated; nay, you may have *an alteration of these conditions*, the right being dilated to-day, the left to-morrow. The mere circumstance, then, of dilation or contraction of the pupil is no sign, when taken by itself, as to the seat or even the existence of effusion, for you may have either condition with or without effusion, and you may have dilatation of the pupil of one eye with an effusion into both sides of the brain. As a general rule, however, it seems to be made out, that in most cases of cerebral inflammation terminating in effusion, there is often, towards the advanced period of the disease some dilatation of pupil, and that this condition generally marks the occurrence of effusion.

With respect to the affections of the function of vision, there are great varieties. Some patients have double vision: others see sparks of fire, or muscæ volitantes. There are many other phenomena of the kind, causing a great variety in the symptoms, and this variety is found to depend more on the susceptibilty of the brain to irritation, than on the mere existence of irritation of the serous membrane investing it. The same rule applies to all cases of serous inflammation, the phenomena of inflammation varying according to the susceptibility of the organ which the inflamed membrane covers. Thus, for instance, one patient will have pericarditis with palpitations of the heart, another without them; their occurrence or non-occurrence merely showing that the heart is more or less susceptible to irritation. So it is with respect to the brain, and the symptoms of deranged vision are connected with the greater or less susceptibility of the organ, which we know varies very considerably in different persons. This remark applies to all the forms, and, I believe, all the phenomena of meningitis.

In acute disease of the brain and its membranes, we often have convulsions and paralysis, and in these symptoms also we find great variations. In some we have convulsions of one side, in some of both, in others we have paralysis, but scarcely any convulsions. The same remark also applies to these symptoms, as to some already mentioned; namely, that we cannot from them alone form an accurate estimate of the situation or amount of disease. You may have convulsions and paralysis of various kinds with the same kind of lesion, and you may have a variety of lesions with the same paralysis and convulsions. The only thing that appears to be pretty well established is this, that generally speaking, in cases where the right side of the brain is engaged, you have convulsions and paralysis of the left side of the body, and *vice versâ*.

Before I proceed to speak of delirium, I think it necessary to say a few words more with respect to convulsions, as I find Andral has not touched on a point to which I beg to call your attention. The occurrence of convulsions in a child, labouring under symptoms of inflammation of the brain, is always looked upon as formidable, and indeed it is natural that convulsions, to persons unacquainted with pathology, should seem to point out a great intensity of disease. I have, however, been long of opinion that convulsions occurring during the existence of hydrocephalus in children, or of meningitis in adults, are not so dangerous as persons generally think. I will even go so far as to say, that the worst cases I have seen, in which a cure was effected, were those in which there were the greatest and most violent convulsions; and that in most of the cases which appeared to go on without any benefit from medicine, there were scarcely any. I am of opinion that convulsions are often of benefit

by giving relief to the brain. This statement must appear somewhat paradoxical, but I trust I shall be able to prove to you that it has some foundation in truth. Broussais has taught that there appear to be two great modes of reäction in the economy, to obviate the effects of anormal stimulation applied to important viscera, fever and convulsions. The irritations which attack the crebro-spinal system may be relieved by convulsions; those which attack the viscera may be relieved by fever and secretion. This doctrine, I think, might be expressed otherwise. The irritations of organs are often relieved by an increase, with or without alteration *of their secretions*. But as we have used the term *secretion* to express something material, we apply the proposition merely to the viscera of organic life. Now it may also be extended to the organs of animal life. A violent expenditure of nervous power may relieve the brain or spinal cord, and delirium and convulsions prevent or modify organic changes, just as secretion from the lung or bowels may prevent ulceration.

I have said that the brain might be relieved by convulsions. Let us, holding this assertion in view, compare the phenomena and results of apoplexy with those of epilepsy. In the first place, it is to be remarked that the earlier phenomena of both are the same, namely, an active congestion of the vessels of the head. Any one who has seen the first stage of both must admit this. But let us follow them up through their remaining stages. In the one we have the determination to the head followed by convulsions more or less violent and protracted, which, however, subside after some time, and the patient gets well; in the other there is either death from the violent determination of blood and probable effusion, or, if the patient recovers, there is very often paralysis, showing that injury has been done to the substance of the brain. Now, here we perceive that the case of determination without convulsions is that in which there is either death or recovery with paralysis; there are no such bad consequences to be dreaded where the determination of the head is followed by convulsive fits. In apoplexy we have congestion followed by death, or recovery with paralysis; in epilepsy we have congestion, convulsions, and relief. It is plain that, if we admit the identity of the phenomena in the early periods of both, we must then also admit that the only cause of relief we can ascertain is convulsions. This idea of the subject will explain how it is, that a man may continue for years subject to repeated attacks of cerebral congestion, and yet continue to enjoy tolerable health. It will also explain why it is unnecessary and sometimes even dangerous to bleed in epilepsy. It also shows why it is so often unaccompanied by paralysis, because the brain is relieved by the expenditure of its nervous energy on the muscular system. I think we should generally look upon the occurrence of convulsions, in a case of cerebro-spinal irritation, in the light of an attempt at a crisis made by nature itself. What is a crisis? An organ labouring under irritation is suddenly relieved by a new process taking place, either in itself or in some other part; and when we come to examine what these modes of relief are, we find them to consist in the occurrence of supersecretion, hæmorrhage, exanthematous eruptions on the surface, or convulsions. There is no doubt that when we look to the results of the sudden supervention of a copious secretion in an inflammatory affection of any secreting organ, the source of relief is manifest. If we take two cases of hepatitis or bronchitis, one attended with copious secretion, the other without any secretion at all, it will be easy to conceive how much more dangerous the latter is, and how much more difficult to manage. Now, if we consider the brain in this point of view, we find that it is not a secreting organ, in the ordinary acceptation, and that the only mode in which it can relieve itself is by the expenditure of its excess of nervous energy on the muscular system, or by the same expenditure of mental energy, as in the case of high delirium. I think we might fairly draw an analogy between this mode of relief and that which in other diseases is the result of hæmorrhage or secretion. One fact, at all events, appears certain, that in two most remarkable cases of different diseases, each, however, characterized by the same phenomena in the early stage,

namely, active determination to the head, we find that the case which turns out favourably is that in which convulsions occur, (namely, epilepsy;) while, in apoplexy, where these symptoms are absent, we have either death or recovery with paralysis.

If this opinion be well grounded, it would militate strongly against the practice of checking the convulsions of meningitis by opiates. I feel convinced that this practice is wrong and dangerous. Its effects may be as injurious as the arresting the reäctions by astringents in a case of acute inflammation. There are two ways in which we can explain its bad effects. In the first place, opiates prove detrimental by checking the convulsions, which appear to be a mode of relief adopted by nature; and, next, they must do mischief from their well-known tendency to add to the existing cerebral congestion. I have now seen a good many cases of meningeal inflammation, in which convulsions took place, and where opiates were employed to remove them, and feel compelled to state that the opium has certainly relieved the convulsions, but the patients have afterwards fallen into a state of profound coma, from which they never recovered. I have witnessed this so often, that I should not discharge my duty properly, did I not warn you against the employment of opium in arachnitis. The same rule most commonly holds good in cases of visceral inflammation, where an organ is in a state of irritation, and has its secretions suppressed. Here also opium, by arresting secretion and increasing congestion, will be productive of bad effects. I allude here particularly to the treatment of pneumonia by opium, as recommended by Dr. Armstrong, who lays great stress upon its use in full doses after having premised a single bleeding. I have had some experience of this mode of treatment, and find that the effect of the opium is, not to remove, but to convert a manifest into a latent disease. I have seen the pain, dyspnœa, and cough subside, but the fever continued, and the destructive process of the lung went on as usual. This is the result of my experience.

I shall now make a few observations on the occurrence of delirium in disease of the brain. In one of my former lectures I alluded to the important fact, that in the majority of cases of meningitis, where delirium was present, there was inflammation of the convexity of the brain. I stated also, that, when inflammation attacked the base of the brain, we might have it going through all its stages without delirium, and pointed out the importance of this in favour of the phrenological doctrines. Andral admits the occurrence of delirium in case of inflammation on the convexity of the brain, but his reasoning upon this subject appears to me to be inconclusive. He divides affections of the convexity of the brain into those which are characterized by delirium through their whole course, and those in which coma is the most remarkable feature, and seems to think that where coma is the most remarkable symptom, the results of the case are unfavourable to phrenology. But we shall find on examining these cases, that in many of them, where coma was the predominant feature, there had been delirium in the commencement. He give the details of thirty-nine cases accompanied by delirium all through, in thirty-six of which there was disease of the convexity of the brain, either simple or complicated with arachnitis. As far then as his first set of cases go, they are in favour of the opinion that inflammation of the convexity of the brain is most commonly attended by delirium. It appears also, that those cases in which coma was the most remarkable symptom, there was more or less delirium in the commencement; so that whether we take the cases in which there was delirium all through, or those in which there was coma, the conclusions appear to be in favour of the doctrines of phrenology.

I shall now proceed to make some remarks on the phenomena of organic life in cases of cerebral inflammation. In the first place, with respect to the tongue, we find that in simple arachnitis it is but slightly affected; there may be some trifling degree of foulness, or it may be quite clean and moist. You will observe the value of this, as connected with the diagnosis of irritation of

the brain from disease of the digestive system. There are many cases of irritation of the digestive system putting on the semblance of hydrocephalus to such a degree, as even to mislead an experienced practitioner. Now, if it be true that in simple arachnitis the tongue remains clean, it furnishes us with very material information, as, under such circumstances, our attention will be directed to the true seat of disease. Andral says, that in some cases of arachnitis he has found the tongue red, or dry or foul, but that at the same time there was disease of the digestive system. The majority of his cases, however, were simple, and exhibited no marks of an affection of the tongue or digestive system.

There is one more symptom on which I wish to offer a few observations, and that is the occurrence of vomiting in the hydrocephalus of children. In all cases where there is obstinate vomiting, particularly in children, you should have your suspicions roused, and look carefully to the state of the head. Vomiting is a symptom which occurs in many cases of arachnitis; in some it is slight, in others more constant, while in a third class it is harassing, incessant, and produced by swallowing the most unirritating substances. The nature of the fluid rejected from the stomach is various, being sometimes bilious, sometimes mucus, sometimes only consisting of what has been recently drunk. In some of these cases you will find the symptoms of incessant vomiting, unaccompanied by pain of the stomach, tenderness of the epigastrium, or any other sign of disease of the digestive system. I have even seen it coëxisting with a good appetite. Many persons have been lost by such cases, having been mistaken for disease of the digestive system, the practitioner being ignorant that vomiting was here only symptomatic of disease of the brain. No matter what the situation of the meningitis may be, it is now established that you may have vomiting as a common symptom. I recollect the case of a delicate child, about seven years of age, who laboured for some time under catarrhal fever, on the subsidence of which she got an attack of vomiting, which came on at different times in the day, but without head-ache, delirium, or intolerence of light. This vomiting continued from day to day; and, at the end of a week, the pupils became suddenly dilated, and coma set in, under which she died. There is one very remarkable circumstance connected with this subject, with which I am anxious you should be acquainted. *Where this incessant vomiting is present, you will have the other symptoms of meningitis more or less latent.* This illustrates a law before alluded to, that where the phenomena which are the result of sympathy with an affected organ are very prominent, those which characterize the disease of the organ itself are more or less latent. If we take the reverse of the former case, and consider a case of gastric disease, we know that the irritation of the stomach will produce violent cerebral symptoms, and that here also the same law is exemplified, for we shall have absence of pain, tenderness, and vomiting. The great value of this rule is, that a knowledge of it will put you on your guard, and that the mere absence of the peculiar symptoms of an affection of an organ possessing extensive sympathies, should not lead you to conclude that there was no disease of that organ. In some remarkable cases of gastritis, the principal symptoms observed were convulsions and delirium; there was no vomiting or thirst, very little pain on pressure, and nothing remarkable in the condition of the tongue. The same latency of inflammatory disease is frequently seen in cases of delirium tremens.

With respect to respiration and the state of the pulse in meningitis, there is very little to be said. You may have meningeal inflammation with every variety of pulse, strong, weak, full, rapid, slow or intermittent. Generally speaking, the pulse is, towards the close of the disease, feeble and intermitting, but you may have the disease running through all its stages without any peculiarity in the character of the pulse. Respiration seems to be very little affected, and this would appear to favour the opinions of Sir Charles Bell. There is no doubt, at least, that the sympathy of the brain with the respiratory system is much weaker than with the digestive.—*Ibid, July 12th,* 1834.

16. *Case of Empyema and Pulmonary Tubercles, illustrative of the connexion between Tubercular Deposition and Chronic Inflammation.* By Robert Christison, M. D.—The subject of the following case was a girl not quite six years of age, who was attacked with obscure pulmonary complaints consequent upon scarlet fever; exhibited in the course of two months all the successive phenomena of chronic pleurisy and empyema; and died in the course of two months more, partly from the latter disorder, partly from chronic peripneumony and tubercular effusion, after having twice undergone the operation of puncture of the chest.

The attack of scarlet fever seems to have been mild, but accompanied from the first by a cough, so slight, however, as not to attract particular notice for some time. In the course of a fortnight an attack of shivering ensued, followed by pain towards the left side of the sternum; by difficult breathing, palpitation, increased cough, frequent sweating, and scantiness of urine. Venesection was had recourse to, as also frequent blistering of the chest, and always with marked though temporary relief.

After being eight weeks ill subsequent to the attack of rigour, she came under the care of my colleague, Dr. Alison, and was found to present characteristically the symptoms of pleuritic effusion in the right side. The right side measured nearly three quarters of an inch more than the left in circumference; the intercostal spaces were more distinct in the left than in the right side; the left moved more than the right side during inspiration; over the whole right side, but particularly in the lower region, there was great dullness on percussion; and the heart beat at the extreme lateral region of the left side.

The left side too of the chest presented some signs of disease. Posteriorly the sound on percussion was clear; but anteriorly it was dull, even a little below the clavicles; and the respiratory murmur was altogether marked by very loud bronchial and tracheal râles. In the right side, it is worthy of remark, the sound of respiration was nowhere absent. It was distinct, but bronchial and much fainter than in the opposite side; so that there is no doubt the sound proceeded, as was inferred at this particular time, from the bronchial respiration of the left side transmitted through the accumulated fluid.

The constitutional symptoms were urgent, hectic being completely formed, and the child much emaciated, and constantly harassed by cough, with scanty, clear expectoration, great difficulty of breathing, and want of sleep.

Little advantage having been obtained from the use of expectorants, diuretics, and local applications, and the breathing becoming more and more difficult, it was thought advisable to try the chance afforded by puncture, although it was impossible to overlook the probability of the existence of some chronic disorder in the left lung, probably chronic peripneumony, with one or other of its sequelæ. Twenty ounces of pus were accordingly withdrawn by an aperture made in the lower part of the chest; and the aperture was closed by a compress and bandage. Considerable relief was presently obtained, the right side became of equal circumference with the left, and respiration could be heard in the upper fourth of the empyematic side. On the second day, the movements of that side during inspiration and expiration were decidedly improved, and the sound on percussion was pretty clear in the superior region. Matters, however, soon returned to their former state; the râles in the left side became louder and mingled with subcrepitating râle; the subcrepitating sound was also distinctly heard in the upper part of the right side; and the constitutional disturbance was manifestly much increased.

She came under my own care about the time when the symptoms were thus becoming aggravated. I determined to try again the effects of puncturing the chest; because, small as was my expectation of any permanent benefit, the girl evidently could not survive above a day without it. On the tenth day, then, after the first operation, it was repeated, and twenty ounces of a thinner pus were removed. After some temporary exhaustion she became for a day or two much easier, and could even assume the horizontal posture, which she

had been unable to do for some time previous. But the fluid again manifestly increased in quantity, the breathing became very laborious, she complained at length of pain, tenderness, and tension of the belly, and four days after the operation she expired.

The body was examined in thirty-six hours. On raising the sternum a quantity of air rushed out of the right side of the chest. In the upper fourth of the anterior part of the chest, the lung adhered to the pleura of the ribs, and there it was pervious to the air and crepitant. Below, however, it was retracted to the posterior, lateral parts of the chest, and to the diaphragm, and was firmly compressed, so that the greater part of it was not a fourth of an inch in thickness. The space left in consequence of its recession was partly filled with pus, together with about two ounces of coagulated blood, and partly with air. The entire *pleura* around the purulent cavity was thickly lined by old coagulable lymph in the form of a membrane, and the lung in consequence irrecoverably bound down. The pleural cavity of left side contained a pound of serous fluid with flakes of recent lymph, some of which adhered to the *pleura*. The *pericardium* presented a few spots of redness, and contained an ounce of slightly flocculent serum.

The left lung was universally and thickly studded with tubercles, many of them clear and miliary, many others opaque, few so large as a lentil. The upper part of the right lung, where not compressed, was in the same condition. Around these tubercular depositions there did not appear to be any trace of hepatization, or any of the other usual results of inflammatory action in the pulmonary tissue. None of the tubercular masses were softened. The condensed, flattened portion of the left lung was perfectly healthy, of a pale pink colour, of a spongy feel, though without any air, very dry, and wholly destitute of tubercular deposition. There were some small abscesses under the costal *pleura* of the right side. The bronchial tubes of the left lung presented much injection of the lining membrane, and an accumulation of viscous mucus in their interior.

There was no effusion in the cavity of the *abdomen*, and no redness or other disease of its serous membrane.

This case is of interest as illustrating two points. *In the first place*, it is a clear and unequivocal instance of tubercular deposition occurring in connexion with chronic inflammatory action. The deposition must have taken place subsequently to the compression of the lower portion of the right lung, otherwise it is impossible to conceive how it should have most minutely pervaded the whole pulmonary texture with the exception of that part alone which was compressed. Such being the fact, it follows that this matter was deposited during the prevalence of chronic inflammatory action, resulting in the gradual progress of the *empyema* and pleuritic disorder. And it is not too great a stretch of inference to conclude, that the facts of the case supply some additional corroboration of the opinion now gaining ground among pathologists, that tubercular effusion sometimes originates in chronic inflammation,—being one of its terminations in persons of unsound constitution, in like manner as serous infiltration and hepatization are the usual terminations in constitutions of a different kind. *In the second place*, the appearances illustrate very well the effect of uniform pressure on an internal organ in preventing the progress of disease in its texture. It cannot but be supposed that every part of the lungs had the same tendency to tubercular deposition, and that the complete absence of this appearance in the compressed portion was owing to the compression; otherwise why should the diffusion of the tubercular matter have been exactly circumscribed by the line marking the boundary where the lung was pressed upon and retracted? Are not the phenomena here parallel to the well-known action of pressure in checking and circumscribing some forms of inflammation in continuous textures on the surface of the body, such as in the skin and subcutaneous cellular tissue?—*Edinburgh Medical and Surgical Journal, April*, 1835.

17. *Rupture of Bladder not Immediately Fatal.*—The *Archives Gén.* for June, 1834, contains an example of this accident. The subject of the case was a man, thirty years of age, who in a quarrel was struck with the foot in the hypogastric region. Symptoms leading to suspicions of rupture of the bladder were manifested. On the introduction of the catheter but a small quantity of turbid urine was evacuated, and on pushing the point of the catheter in different directions, M. Dupuytren perceived that when directed towards the anterior-superior portion of the bladder, the instrument might be made to penetrate to an indefinite extent; and more urine was then evacuated. Leeches were applied to the pubic region, demulcent drinks in small quantities allowed, and rigid diet ordered. Under these measures the inflammation seemed to be circumscribed to the neighbourhood of the bladder, and the violence of the symptoms controlled. But about the sixth day the patient disobeyed the instructions respecting diet, and even drank wine, and on the seventh day he died. On examination there were found cellular bands, which formed a second sac, posterior to the bladder, and containing a turbid fluid, of an urinous odour, and mixed with albuminous flocculi. These was also a rupture of the bladder, two inches in extent, at its posterior portion. It was the opinion of M. Dupuytren and those who examined the subject, on witnessing the admirable efforts made by nature to supply the bladder, that the death of the patient was rather owing to his imprudence in diet than to the rupture of the bladder.

18. *Obstinate Constipation.*—An example of this, which lasted thirty-nine days, is recorded in *l'Abeille Belge.* After resisting a variety of purgatives, the constipation yielded on the thirty-ninth day, and from this period all the symptoms produced by it disappeared.

MATERIA MEDICA AND PHARMACY.

19. *Preparation of the Ioduret and Hydriodate of Iron.*—Every practitioner who has employed these valuable preparations must have had ample proof of their mutable qualities and of the readiness with which they become decomposed; the following directions by Dr. A. T. Thomson, for their preparation and preservation, will therefore be useful, especially to country physicians.

Precautions necessary in the preparation of the Ioduret and the Hydriodate.—One part of the iron wire should be rubbed in a porcelain or a Wedgwood's mortar, with about three or four parts of iodine, gradually adding distilled water, until fifteen parts of the fluid shall have been used: the whole is then to be introduced into a Florence flask, with an additional portion of iron wire, and of distilled water. This excess of iron is a matter of indifference in the preparation of the hydriodate; and, in that of the ioduret, it is necessary for preserving the combination from decomposition, during the evaporation of the solution. These materials are next to be boiled together, until the fluid acquire a pale greenish colour, when it should be filtered. This solution contains a hydriodate of the protoxide of iron; and, if the exact quantity of the iodine be previously ascertained, so as to enable us to procure the solution of a definite strength, it may be kept in this state for medicinal use. In general, however, the solution is evaporated to dryness; and for this purpose it may be poured into a clean flask, containing a piece of iron wire sufficiently long to reach from the bottom to the surface of the fluid, and the boiling should be continued until the bulk of the solution be reduced to one-third. It must then be filtered; after which the evaporation should be continued to dryness. It is necessary to break the flask as soon as the mass is cold, in order to obtain the solid ioduret, which should be immediately transferred to a dry bottle, fitted with an accurately ground stopper. The bottle should not hold more than two ounces of the preparation; for, when it is large and not full, the ioduret

deliquesces nearly as rapidly as when it is exposed to the free action of the atmosphere. When the flask is broken and the ioduret bottled before the mass is cold, deliquescence also takes place; a peroxide of the metal is formed, and iodine is evolved.

Precautions necessary for preserving both Preparations.—The ioduret requires to be well secured from the influence of the atmosphere; both on account of its deliquescent property, the rapid oxydizement which the iron undergoes when deliquescence occurs, and the consequent decomposition which takes place. It is important to prevent this state of things, as the peroxide of iron is inert as a medicinal agent; whilst the free iodine, extricated during its formation, alters altogether the virtues of the medicine. This partial decomposition of the ioduret is rendered immediately apparent, on dissolving it in twenty times its weight of distilled water and filtering; instead of a permanent, clear, very pale greenish yellow, we obtain an ochre-coloured or brown solution, which soon becomes turbid, and gradually deposits an ochre-coloured completely insoluble precipitate. Much of the ioduret usually prepared both by many chemists and druggists, and also general practitioners, is of this description; and to this we may refer some of the disappointment and discrepancy of opinion of different practitioners respecting the operation of the medicine in similar cases. Even when the ioduret has been carefully prepared, and is good of its kind, it often contains a little free iodine; but it is chiefly owing to the carelessness of assistants and apprentices, in compounding prescriptions, by frequently exposing the ioduret to the air, that its properties, and consequently its medicinal powers, are impaired; hence, it is preferable to keep it in solution, or in the state of the hydriodate.

If the solution be prepared with a definite quantity of iodine, as already described, it will keep without changing its characters; but, as it is usually made by dissolving the ioduret in distilled water, it requires to be rendered neutral by the following means. Introduce into a flask, the solution of any given strength, and place in it two or three doubles of clean soft iron wire, sufficiently long to extend to the surface of the fluid; boil it for a few minutes, and then leave it at rest until the solution becomes clear, after which it may be either decanted off from the precipitate which forms, or filtered: no farther change takes place in a solution thus treated if it be kept in a blackened or a green bottle, however long it may be preserved. In this process, the wire affords iron to saturate any free iodine present in the solution, or that may have been extricated by the formation of the peroxide of iron in the ioduret; and a perfectly neutral solution being thus obtained, by the immediate conversion of the new formed ioduret into the hydriodate of the protoxide, no subsequent change takes place so long as the solution is kept secluded from the light. It is not easy to explain this influence of light in decomposing the solution of the hydriodate of iron; but several other of the metallic hydriodates are affected in the same manner by light. The best proportions for forming the medicinal solution are three grains of the dry solid ioduret to each fluid drachm of distilled water. If the water be not either distilled, or filtered rain water, perfectly free from foreign ingredients, particularly if it contain any earthy or saline carbonates, decomposition instantly takes place, iodine is extricated, and a carbonate of iron, which rapidly passes into the state of the peroxide of that metal, is precipitated.

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20. *Physiological Effects of Hydriodate of Iron.*—Dr. Thomson, from experiments on his own person, states the following to be the physiological effects of the hydriodate of iron.

"When taken in doses of from three to five grains, the hydriodate of iron makes no sensible impression on the stomach, although it sharpens the appetite and improves the digestive function; it seems to stimulate moderately the intestinal canal through its entire length, as it opens the bowels; and whilst it produces the black colour of the alvine discharges characteristic of all the pre-

parations of iron, it corrects their fœtor. When it does not affect the bowels, it augments the action of the kidneys, increasing the flow of urine; and if the solution be taken two or three times a-day, for several days successively, the presence of both the iodine and the iron can be readily detected in the urine. The temperature of the skin is moderately elevated, and the insensible perspiration increased. On one occasion, having taken ten grains for a dose, it almost immediately caused an uneasy sensation at the epigastrium, accompanied with nausea that continued for several hours; and a slight degree of head-ache. These symptoms were relieved by a copious stool, which was perfectly black. Two hours after swallowing the medicine, a large quantity of urine was discharged; and on being tested, it displayed the presence of both the iodine and the iron."

21. *Corrector of Opium.*—According to M. Puchelt, a German physician, the sulphate of soda is an excellent corrector of the unpleasant effects of opium, given in the proportion of a scruple to half a grain of opium. This dose may be repeated two or three times a day. In combination with Glauber's salt, opium, he says, may be administered in cases where slight plethora, local or general, prevents recourse being had to opium alone. In obstinate hæmorrhages principally, this mixture will produce the happiest effects. But if sulphate of soda prevents the congestion which opium sometimes produces, M. Puchelt says that there is another article which corrects its narcotic, without diminishing its sedative effects—this is the castor. The combination of opium and castor he considers very useful in cases of hysteria.—*Lond. Med. and Surg. Journ. May 30th*, 1835.

PRACTICE OF MEDICINE.

22. *Treatment of Hydrocephalus.* By William Stokes, M. D.—The old idea of this affection was, that it was a species of dropsy, depending on a relaxed state of the cerebral vessels, and hence the term hydrocephalus. Modern pathology has shown that the occurrence of serous effusion is a mere accidental circumstance, as it is present in one case of arachnitis, and absent in another. When it does occur, however, *it is the result of inflammatory disease*, and it is to the prevention and cure of this, that the practitioner must direct his attention. With the symptoms of this disease, I shall not take up your time, as you will find them sufficiently detailed in books; but with respect to treatment, I shall say that hydrocephalus is a disease *much more* under the influence of treatment than persons generally think. It is said that, when once effusion has taken place, the case is hopeless, and nothing can be done. This remark appears to me to be unnecessary, for there is no symptom from which you can venture to assert that *effusion* has set it. You may, from the inflammatory state of the brain, have delirium, coma, deafness, blindness, and paralysis, without any effusion of serum, and in many cases life has been saved, even after the appearance of all these symptoms.

This term *effusion* is one of the bugbears of medicine. Many patients are lost from the prevalence of false ideas connected with this subject; for as soon as *effusion* is supposed to have set in, the efforts of the practitioner are given up. Hundreds of patients die of bronchitis and pneumonia, in whom life might be saved if the symptoms of *effusion* had been treated for those of inflammation; and so it is with respect to the brain. The effusion is not the disease; it is not even a constant result of the disease. We have no certain means of ascertaining its existence; and we know, that, by a persistance in antiphlogistic treatment, life may be often saved, even after all the supposed symptoms have occurred.

Gentlemen, take this with you as a rule in medicine,—always to keep your eye more upon the causes than the effects of disease.

The treatment of hydrocephalus in the child should always be active, and conducted on the same principles as those of general encephalitis in the adult. Shaving the head, bleeding when practicable, *repeated leeching*, *cold affusion*, *calomel*, and *purgatives*,—these are the great measures upon which we are to rely for success. It is satisfactory too to reflect, that many cases have been saved by the prompt and steady adoption of this simple mode of treatment.

Of Internal Remedies.—The use of mercury seems to be that on which you should most rely. Some of the most singular recoveries have occurred after ptyalism has been produced. Let me remind you, however, that the rules connected with this mode of treatment, which I pointed out in speaking of hepatitis, apply equally in this case.

In the treatment of this affection, it is of the utmost consequence to attend to the position of the patient. By keeping him as much as possible upright, or by preventing him leaning constantly on one side, we do much to prevent the occurrence of the ulceration of the angle of the mouth.

As far as I can see, hydrocephalus, when taken in time, is a very manageable disease; and there is only one case in which it is difficult to treat, and that is where the cerebral affection is accompanied by symptoms of gastro-enteric disease. In several cases of hydrocephalus, this complication certainly exists; and you have first symptoms of disease of the digestive tube, and then of the head. Such cases as these are involved in great difficulty, and in their treatment you run the hazard of falling into a twofold mistake. The first is your acting on the supposition that the disease of the head is only sympathetic, and that it will subside as soon as the abdominal symptoms are removed; the other is occupying your attention exclusively with the head. Now there is one rule with respect to this, which I think will serve to guide you through many difficulties, *and this is, never to neglect the head.* Though you have first an affection of the digestive system, and then of the head, it is better, (even though the symptoms of the latter still continue,) to pay attention to the head. You can do this at the same time that you are attentive to the condition of the digestive organs. Another rule is, that the cases of disease in which the purgative plan does not answer are generally those in which there is primary inflammation of the digestive tube. Dr. Cheyne, in speaking of the treatment of hydrocephalus, says, that some cases are benefited by purgatives, others not; and that the latter are those in which there is disease of the intestinal canal. In such cases you will not irritate the bowels, or add to the existing inflammation by purgatives. Let the bowels be kept open by enemata, and direct your attention immediately to the head. Children with largely developed heads, and of a strumous diathesis, are very subject to this disease; and I feel convinced that the present rage for the early mental education of children has a strong tendency to produce it in subjects of this description. I believe there are many cases of fatal hydrocephalus, from which the poor victims would have escaped, but for the pernicious efforts of the parents to make them literary prodigies. I have observed many cases of this kind among the children of persons who, having been originally situated in an humble sphere, and deprived of the benefits of education, accumulate wealth, and then, feeling in their new condition the want of education, are anxious to communicate it to their offspring; and with that view have them educated with too much care and from too early a period. The child is constantly kept at his books, his little mind is perpetually tasked, a degree of cerebral excitement is kept up, and while he is delighting his gratified parents with the manifestations of a precocious intellect, his health is neglected, and the seeds of disease are insensibly sown. One of the most ordinary consequences of this early application of the mental powers is hydrocephalus. These little creatures, too, have a congenital disposition to disease of the brain, for they have generally large heads. Such cases are examples of the results of an arrest of development. A relative condition of head exists similar to that which occurs during fœtal life, and this is always accompanied by a remarkable susceptibility to inflammation. This peculiar development of head also produces

a precocious state of intellect, which is increased by the pernicious habit of obliging children to study at too early an age. Where you meet with children suffering under these circumstances, you will not discharge your duty properly if you do not point out to the parents the mischievous tendency of their conduct. In such cases as these it may be justly said that ignorance is bliss.—*Lond. Med. and Surg. Journ. July 12th*, 1835.

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23. *Mercurial Cancrum Oris.* By William Stokes, M. D.—There is a terrible consequence of mercurial action in the lymphatic temperament, with which you should be acquainted,—I allude to a violent and destructive inflammation of the soft parts of the mouth and face, which has got the name of the *mercurial cancrum oris.* An œdematous inflammation of the cheeks, lips, and tongue, takes place, and, if not checked, rapidly runs on to extensive ulceration. I have seen one cheek, half of the nose, the lower eyelid, and the opposite angles of the mouth, utterly destroyed, in a case where but five grains of calomel were used. This drawing represents the disease, after a frightful perforation of the cheek. In this case the quantity used was nine grains. I have seen the disease from the use of so small a quantity as a grain and a half of calomel! These facts show that there is a state of the constitution in which a minute dose of calomel may have terrible effects. The same, too, may arise from the external use of mercury. I recollect the case of a young woman in the Meath Hospital, whose head was rubbed with *one drachm* only of mercurial ointment, for the purpose of destroying vermin. She was attacked, and with difficulty saved.

The disease may also come on suddenly in a patient who has been for some time using mercury in considerable doses; but this is the rarest case.

You recognise this disease by the sudden supervention of great swelling of the lips and cheeks, so as to completely alter the expression. The tongue is also swollen. All these parts are hot and tender to pressure. The breath is fœtid, and the internal surface of the mouth excoriated, and often covered here and there with patches of lymph. At other times we have a circumscribed œdematous swelling, occupying the centre of the cheek, which runs on to ulceration; but most commonly the ulceration of the external parts begins at the depending angle of the mouth.

Gentlemen, in a case of this kind, if you are called before ulceration has taken place, I believe you can often save your patient, and prevent destruction of the face. Treat the disease as a violent inflammation. Use repeated leeching, poulticing, and the warm bath. *While you do this, you must keep up your patient's strength by light nourishment and wine.* Apply to the internal ulcerations the mel æruginis, the nitrate of silver, or the chloride of soda. I have now saved many cases by bold and repeated leeching. I remember one case of a man in which ninety leeches were used; he recovered perfectly.—*Ibid.*

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24. *Treatment of Apoplexy.* By William Stokes, M. D.—I shall endeavour to get through the treatment of apoplexy as briefly as the important nature of the subject will admit. I shall commence by saying, in the words of Dr. Abercrombie, that the remedies for apoplexy are few and simple. The great point is to relieve the head from the accumulation of blood, to prevent farther congestion, and to obviate inflammatory action; and for these purposes the only efficient means we possess is bleeding. There is no disease in which the efficacy of free and bold depletion by the lancet is more remarkable than in apoplexy. I agree completely with Dr. Abercrombie in thinking that the symptoms which denote serous apoplexy by no means contra-indicate the use of the lancet; for I have already shown, that serous apoplexy was nothing but congestion, that the serous effusion was one of the consequences of this congestion, and by no means the cause of the apoplectic symptoms. Dr. Abercrombie thinks that, in the commencement of the disease you may bleed where the pulse is feeble as well as where it is strong and full, and gives many important

cases in which the disease yielded to a copious abstraction of blood, though the state of the patient's pulse and general system at the time were such as would deter many from bleeding. He gives three cases of persons about seventy years of age, on whom this mode of treatment was practised with success, and another of a person of spare habit, aged eighty years, whose life was saved by a bold and timely use of the lancet. There is also another case detailed of a patient who was worn down and dropsical at the time of the attack, and received considerable relief from bleeding. I do not wish you to conclude from this, that you should bleed as boldly in the one case as in another; what I wish to impress on you is this, that in the vast majority of cases it is advisable to have recourse to the lancet. With respect to the first bleeding, I think that where the pulse is full and strong it should be large, and such as will produce some effect on the symptoms. This may be repeated afterwards to a smaller amount if necessary; but the subsequent bleedings should be rather local than general, except where there is any renewal of the cerebral and circulatory excitement, which must be always met with activity. I believe the cases in which you must make the largest bleedings are those in which there are symptoms of an hypertrophied heart. But where this is not present, one or two bold bleedings, followed by local depletion of the head, will be sufficient. In cases of apoplexy, you may either open a vein or the temporal artery, for the objections made to arteriotomy in phrenitis do not apply so much to cases of apoplexy. There is no violence on the part of the patient, nor is there the same chance of the vessel giving way. The head should be shaved and freely leeched, and the patient may be cupped on the temples or the back of the neck.

Next in efficacy to general and local bleeding seems to be the administration of strong purgatives. There are many cases on record, in which the coma and other symptoms have resisted bleeding, both general and local, but have disappeared under the influence of active purgation. One of the great objects in the treatment of apoplexy should be to get rid of the coma as soon as possible; and for this purpose nothing appears to answer better than the early use of brisk purgatives. Dr. Abercrombie recommends croton oil as the best purgative that can be employed, and indeed it is an excellent one; but if the patient can swallow, you need not be very anxious about the kind of purgative you prescribe; any active purgative followed by a strong enema will do. Where the patient cannot swallow, you may mix the dose of croton oil with some mucilage, and pass it into the œsophagus by means of a gum elastic tube.

After purgation, the next thing is to apply cold to the head by means of cold lotions, or iced water, or by pouring a stream of cold water on the head. This is a measure of great efficacy, and one which you may employ with safety and advantage.

In cases of apoplexy, where the coma has resisted free bleeding, both general and local, and where purgation and cold applications to the head have been employed without any decided effect, it seems advisable to apply a blister to the head or nape of the neck. You will recollect that I told you that blisters were always dangerous in the early periods of all acute visceral inflammations. This, however, does not apply so much to cases of hæmorrhagic effusion like apoplexy, in which blisters may be employed at an earlier period than in cases of active inflammation. I would advise you, therefore, to use blisters in cases of apoplexy attended by persistent coma, having first put into practice the means already mentioned.

Many persons advise the use of emetics in apoplexy, but the facts bearing on this point, to which I have drawn your attention when speaking of inflammation of the brain, will also apply here. You may take it as a general rule, that where congestion of the head exists, vomiting will always increase it, and must be therefore exceedingly dangerous. As far as theory goes it is totally against this practice, and I believe experience also is opposed to it. In a number of cases of disease of the brain, where emetics were employed, it has been found that

an unfavourable result had ensued, and there are some cases of apoplexy on record in which the exciting cause was a fit of vomiting.

Suppose that, after having taken away blood, purged actively, used cold applications, and blistered the head, the coma still remains, accompanied by a feeble pulse and cold skin, what are you to do? I believe, under these circumstances and these alone, you may venture on the use of internal stimulants. Though this is at best but a forlorn hope, still the practice appears rational; we have analogy to guide us in the use of stimulants in such cases, and there are cases on record of persons who have recovered from this state by their judicious employment. The remedies most generally prescribed for this purpose are camphor, musk, and carbonate of ammonia. In the cases of typhus, we know that these remedies have frequently succeeded in removing the coma; but I repeat that you should never have recourse to stimulants until the period for depletion has passed by, and all the ordinary means have failed.

I shall now suppose that we have succeeded in removing the coma, that consciousness has returned, and that nothing remains but paralysis of one side. Our great object is to get rid of the paralysis as soon as possible. Here you will recollect, that you have to deal with paralysis depending on extravasation, a paralysis which, as far as we know, will not disappear under any form of treatment until the extravasated blood has been absorbed. The first thing then you have to do is to adopt measures to prevent a return of the attack. This is to be effected by carefully restricting the patient in his diet, by avoiding all causes of cerebral irritation, whether physical or moral, and by obviating every thing capable of exciting the circulation. But you should not be content with this; you should, from time to time, employ local depletion, which in cases of this kind has a double utility. It tends to prevent a repetition of the attack, and, by lowering the circulation, keeps the brain in that non-inflammatory condition, which is most favourable towards promoting the absorption of the coagulum. In many cases, also, you will find it of great advantage to establish a drain in the vicinity of the disease, and a great deal of good may be done by putting a seton, or an issue, in the neck. You must also pay constant attention to the state of the bowels and urinary system in cases of paralysis; keeping up a steady but mild action of the bowels has an excellent effect, and I need not impress upon you the necessity of paying strict attention to the bladder.—*Ibid, Aug. 9th*, 1834.

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25. *Treatment of Paralysis consequent on Apoplexy.* By William Stokes, M. D.—The paralysis, which supervenes on an attack of apoplexy, is to be treated always in the first place by means directed to the head, and the brain is to be put in such a state as will favour the removal of the clot by the means already recommended; in addition to which it will be necessary that the body and extremities should be kept in a warm temperature. But there is this very singular circumstance connected with some cases of paralysis, that a period will arrive when, although the original disease of the brain has been removed, and the clot absorbed, the paralysis still continues. It is not easy to explain this circumstance, but it has been observed in many persons, who have been paralytic, that the clot was completely absorbed, and no existing trace of disease discoverable, such as would account for the continuance of the paralysis. In cases like this, we must adopt a different mode of practice, and have recourse to measures capable of exciting the brain, and we have reason to believe, that whatever will excite the brain and restore its energy, (I must use this phrase for want of a better,) will cure the paralysis. We find that, in some cases, where the brain of a patient, under such circumstances, has been exposed to any sudden stimulus, whether physical or moral, the symptoms of paralysis have disappeared, sometimes gradually and slowly, at other times rapidly and at once. Now, this disappearance of the symptoms shows that the paralysis did not then depend on the presence of a clot, for if an unabsorbed coagulum remained in the situation of the original extravasation, the paralysis would not disappear. But it has been

frequently observed, that a patient, labouring under paralysis, may get rid of his symptoms suddenly, or that, at a certain period, they begin to decline, and then go away altogether. From a consideration of these circumstances we are led to divide the treatment of paralysis of this description into two parts, and endeavour first to excite the brain itself and next the nerves, which supply the paralyzed limbs. For this purpose several remedies, supposed to be capable of stimulating the brain, so far as its action on the muscular system is concerned, have been recommended, the most important of which is the nux vomica, or its active principle, strychnine. The researches and experiments of modern medicine have already established the efficacy of strychnine in such cases, but you will recollect, as I before stated, that this powerful remedy can be employed with safety only in cases where the paralysis continues after the disappearance of organic disease of the brain. Until that period arrives, and all symptoms of congestion and excitement are removed, it would be improper to prescribe the use of strychnine. One of the most recent publications on this subject is from the pen of Dr. Bardsley, of Manchester, in which you will find an exceedingly interesting series of cases treated with strychnine, and many of them with the most decided success. In most of these cases, you will find that Dr. Bardsley, even where the disease has been of some standing, *precedes the use of strychnine by measures calculated to deplete the head*, even though the cases were chronic. Hence, whenever you are about to prescribe this remedy, you should be satisfied that depletion has been sufficiently performed. You may be called to treat a patient for paralysis after an apoplectic attack. Here you must consider how far you are to premise the use of strychnine by depleting measures, and you must also reflect that we here have shadowed out one of the most important principles in medicine, *that in almost all cases where a cure is to be attained by stimulation, it will be effected more readily, and with much more certainty, when preceded by local depletion, no matter how long the disease may have lasted.* The efficacy of strychnine in paralysis seems to be dependent on the antecedence of local or general depletion.

Strychnine being an exceedingly active remedy, and having a most powerful effect in stimulating the brain, it being also one of the accumulative class of medicines, it will be proper to commence its exhibition with a very small dose, and watch its effects with care. The following is the formula which I would recommend you to employ. You take a grain of strychnine, and your object being to divide it into a number of equal parts, (say sixteen,) to ensure an accurate division, you dissolve it in a small quantity of alcohol, and having mixed this solution with a sufficient quantity of bread crumb or conserve of roses, you divide it carefully into sixteen equal pills. In this way you may be tolerably certain that each pill contains one-sixteenth of a grain. Begin at first with one pill a-day, next day you may give two, and so on until you have brought it up to half a grain or a grain, watching carefully its effects. Now, what are these effects? They are very analogous to the phenomena produced by inflammation of the brain taking place in the vicinity of the clot; namely, spasms of the muscular system.

It is also a curious fact, that these spasms are principally observed on the paralyzed side; in other words, that the portion of the brain which has been affected by disease is more sensible to the stimulus of the strychnine, the consequence of which is spasmodic twitches in the paralyzed limbs. The great nicety of practice in the treatment of paralysis in this way, is to keep up a certain degree of this irritation without letting it proceed to any degree of violence, and to omit it whenever the following symptoms become manifest,—head-ache, giddiness, weakness and sickness of stomach, and too violent spasmodic twitches of the limbs.

There is a great difference with respect to susceptibility of the effects of this remedy in different individuals; in some the effects speedily appear, and you are obliged to intermit its use; others will bear large doses for a considerable time, and you may push the strychnine until a grain or a grain and a half is

taken in the day. I have myself given to one patient a grain every day for the space of a fortnight without any intermission. In all cases, however, it will be necessary to watch the symptoms. There is one effect of strychnine which appears to be unfavourable, and whenever it occurs you should either omit the medicine or diminish the dose. Along with or succeeding the spasms, *there is a tonic rigidity of the limbs;* when this occurs you should be cautious in the administration of strychnine. The length of time which it should be continued will of course vary according to circumstances, but you should be aware that it requires a considerable period of time to produce its effects. In all Dr. Bardsley's cases, and in all those treated at the Meath Hospital, it has been continued for a considerable time, certainly more than a month. It is also necessary for you to recollect that strychnine is one of those medicines which are termed accumulative; that is to say, remedies, the operation of which, after remaining latent for some time, suddenly explodes with great violence. When this occurs, the strychnine must be immediately given up, and steps taken to controul its effects. One of the best things for this purpose is the carbonate of ammonia with some mild anodyne. I have seen very severe spasms from the use of this medicine. In one case these spasms were so violent as to roll the patient nearly out of bed.

It has been proposed to employ brucine as a substitute for strychnine. Of this remedy I can say but very little; I have given it but very seldom, I believe only in two cases, and in these without any sensible effect. It is much weaker than the former remedy, one-fourth of a grain of strychnine being equal to six grains of brucine. Other remedies have been proposed for the same purpose, among the rest, iodine, which has been recommended by Dr. Mansfield.

We now come to the local management of the disease, or that portion of its treatment which consists in the application of stimulants to the nerves and their origins. Local stimulation of paralytic limbs may be performed in a variety of ways; all the usual stimulant embrocations may be employed for this purpose with the best effects. I shall not take up your time in detailing the different kinds of liniments which are used on such occasions; they are universally known, and may be varied *ad infinitum*. The flesh brush, the shower-bath, either tepid or cold, occasional blisters to the spine, or along the course of the nerves, croton oil and terebinthinate frictions,—all these are measures that may be employed with advantage. The use of the moxa has been also strongly recommended, and appears to be decidedly beneficial. The efficacy of all these remedies, however, seems to depend chiefly on the particular stage and nature of the disease, and hence their good effects are most apparent in those cases where the paralysis no longer depends on organic disease of the brain, but seems to be connected with that peculiar state of the nervous system which arises from a long interruption of the power of transmitting volition. It is in cases like this, that the application of the moxa has been found to produce the most favourable results. Where the lower extremities are affected, it may be applied over the sciatic nerve on the loins, or a little below and to the outer side of the politeal space over the track of the peroneal nerve. In case of paralysis of the upper extremity, you may apply it to the back of the neck, or in the neighbourhood of the brachial plexus.

A gentleman, who does me the honour of attending these lectures, has related to me the particulars of a remarkable case, which I shall mention *en passant*. A young female was subject to repeated violent attacks of spasms with contraction in one of the upper extremities. She had laboured under this affection for a long time, and tried various remedies without benefit. At the suggestion of this gentleman she tried cupping in the neighbourhood of the shoulder and brachial plexus, and found that it produced decided relief to the symptoms. In this case it is highly probable that the disease was seated in the brachial plexus, and had no connexion with the brain, for it had continued for a great length of time, (more than three years, I believe,) without any remarkable variation in its symptoms. If the spasms of the arm had been produced by irritation of the

brain, she would in all probability have had paralysis long before this period; this, however, did not occur, and the probability that the disease was seated in the brachial plexus is still farther confirmed by the fact, that the spasms were relieved by local bleedings. Here we have the spasms relieved by antiphlogistic means, but in a case of atony of the same nerves, most benefit would be derived from the use of stimulants. The more completely the paralysis is of this description, the more sure will be the effects of local stimulation. You will sometimes meet with cases of paralysis from pressure on the nerves without organic disease. Thus there is a case on record, of a person who lost the use of one of his upper extremities, from having leant too long over a bench at a public meeting. I recollect the case of a man, who during a fit of intoxication fell asleep with his arm thrown over the back of a chair, and awoke with perfect paralysis of the hand. Cases like these are seldom of long duration, and are much improved by the application of the moxa. I may state, however, that permanent paralysis has been induced in this way. The best way of using the moxa is, not to make a deep eschar, but to touch the parts slightly, and repeat the application frequently. In the case of paralysis of the hand, immediate relief followed the use of the moxa to the back of the wrist.

While on the subject, I may advise you always to employ the moxa in the mode first, I believe, devised by my friend and colleague, Professor M'Namara. The top of the moxa is to be dipped in a strong solution of the oxymuriate of potass, which is to be allowed to dry upon it. The moxa being fixed to the part by a little gum, a drop of strong sulphuric acid will produce immediate ignition. In this way you prevent all the alarm which the patient feels at seeing a lighted candle brought to the bed-side. The same rule is to be observed when you employ electricity, the best mode of using which is to place the patient on an insulated stool, and draw sparks from, or shocks through, the affected limbs. Electricity frequently does much good in such cases; but in order to obtain decided benefit from it, you must persevere for some time in its employment. It has been lately proposed to employ the stimulus of electricity and galvanism in a different way, by transmitting it directly to the muscles of the affected limbs by means of needles, which are to be inserted into different parts of paralyzed extremities, and which are intended to act as conductors for transmitting the galvanic influence. This has been termed *electro or galvanic puncturation*, and forms an excellent mode of applying the stimulus of galvanism. I have made many experiments as to its effects, to which I shall briefly direct your attention.

The first thing to be considered is the manner of its application. The following is that which I use at the Meath Hospital:—Having procured two fine sewing needles, your first step will be to take the temper out of them; for, if you employ them in the tempered state, you will run the risk of their breaking in the flesh, and this would be very disagreeable. You can easily take the temper out of them by holding them in a candle until they become red hot, and then letting them cool gradually. The next thing is to place a head which will remain firm on the needle, and for this purpose you pass a small portion of thread through the eye, and then cover it with a bit of melted sealing wax. Having thus formed a head for the needle, you sharpen its point, and polish it by the emery pincushion, and the sharper it is the better. There is nothing more simple than to introduce the needles. You make the part of the skin tense with your finger and thumb, where you intend to introduce them, and placing the point of the needle perpendicularly on it, you press it downwards in a slanting direction, using, at the same time, a rotatory motion, and thus easily pass it in; when you have pierced the skin and fascia, there is no difficulty in introducing it into the muscular fibres. The distance between the needles must be regulated according to circumstances. You then proceed to send the galvanic fluid to the part, and for this purpose, the best mode is to employ a small galvanic battery with a limited number of plates. If you have plates of from two to three square inches you will find that from fifteen to twenty of these, in a state of ordinary

action, will be quite sufficient, particularly in the commencement of the treatment. It is a curious fact, that the intensity of the shock is increased to an extraordinary degree by means of the needles. A battery which, in the usual manner, would not communicate any shock, will, when used with the needles, give a violent one, and communicate such a stimulus to the nerves as will throw the whole limb into violent spasms, and cause a copious perspiration to break out over the body. I have seen very great effects from a feeble battery in this way, and it would appear that this is the result of the *direct* transmission of the galvanic influence to the muscular fibre. In most cases a perspiration is brought on, the limb convulsed, and sometimes the whole body is thrown into spasms. As an illustration of the power of the battery when used in this way, I shall mention the following case:—A patient, who was under the care of Mr. Hamilton, laboured under amauroses; he was anxious to try the effect of galvanism, and with this view inserted one needle in the upper part of the back of the neck, and another over the orbit, so as to direct the trajêt of the fluid across the base of the brain. He intended at first to use a small battery of twenty-five plates, but it struck him that even twenty-five might be too much. He made the experiment with three pairs of plates, and the shock being given, the patient, to his astonishment, fell back as if he had been stunned by a violent blow on the head, and remained for nearly a minute in a state of insensibility. In other cases too, where the galvanism was applied in the vicinity of the head, I have found that severe head-ache, giddiness, and even a stiffness of the muscles of the face, were produced; all showing its powerful action on the nervous centre.

Some singular circumstances, connected with this subject, were observed in the Meath Hospital. It was found that after a certain number of shocks had been communicated to the parts, when you came to withdraw the needles, there was a very remarkable difference in the ease of removing them. The needle through which the positive galvanic influence had been transmitted, was found to be strongly fastened in its situation, while that, to which the negative pole had been applied, slipped out with the greatest ease. This result was constant. In some cases, where half a dozen shocks or so have been given, the extraction of the positive needle has been only accomplished with considerable pain to the patient.

It has been suggested by a distinguished scientific friend of mine, that this results from the coagulation of albumen at the positive pole. Mr. Hamilton, however, who performed most of the operations for me, thinks that the true explanation is the paralyzing effect of the negative pole on the muscular fibre, while the positive needle is firmly grasped by the increased contraction. Farther researches are necessary on this point. Another fact connected with this subject is, that when the needles have been inserted into a large muscular mass, the positive needle is powerfully retracted, and carried, as it were, into the muscles. In one case, where the needle was inserted into the lumbar muscles, in a patient labouring under sciatica, more than one-twelfth of an inch of it was drawn in at each shock; so that, after a certain number of shocks, it passed up to the head. This is one reason for using the sealing wax head, in order to prevent the complete passing in of the needle.

With respect to our experience of the value of this mode of employing electricity or galvanism, I have to remark that, if galvanism or electricity can be of any use to paralyzed limbs, this is one of the best modes in which it can be applied. The apparatus is simple, can be prepared in a moment, and does not depend on the state of the weather, like the ordinary electrical machines. There is another advantage, also, it is not so likely to excite alarm in the mind of the patient. We have employed it in several rheumatic and paralytic cases in the Meath Hospital, but have not as yet been able to say that decided benefit has accrued from it to the majority of the patients on whom it has been tried. This is more particularly true with respect to paralytic patients; in the rheumatic cases we have found it more beneficial. In a remarkable case, where the deltoid muscle was paralyzed and atrophied from some affection of its nerves, Mr.

Hamilton tried it for a fortnight without any good effects. In a case of senile amaurosis, its effect was to produce flashes of light before the eyes, lachrymation, and contraction of the pupil, but, after a fortnight's trial, there was no improvement in the sight. We have had, however, distinct and unequivocal proofs of its value in one case of paralysis of the muscles of the face, which had all the characters of that described by Sir C. Bell, as resulting from an affection of the seventh pair of nerves. This patient had been for a long time labouring under an affection of one side of the face, and had used a variety of remedies. Those principally employed were stimulating liniments and the internal use of strychnine, from which he derived some slight benefit; but the application of the galvanic fluid, in the way I have mentioned, was followed by decided and rapid improvement. Indeed, from the time it was first applied, the patient recovered rapidly, so that in a very short time all the deformity of face disappeared. Now the value of the application is to be estimated in this way. Here we have a case of paralysis of a local nature, and not depending upon any disease of the brain; in this case the galvano-puncturation was tried, and found to be most beneficial. The conclusion, then, as far as a single case goes, is that this mode of treatment is best adapted to the form of paralysis just mentioned, in which we find an affection of some of the muscles remaining after the original disease of the brain has been removed. The same observation, I need not tell you, applies to all other remedies which are employed for the purpose of local stimulation.—*Ibid, August 9th and September 6th*, 1834.

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26. *Treatment of Paralysis from disease of the Arterial System.* By William Stokes, M. D.—With respect to the treatment of paralysis, if the patient be young, and the disease recognised at an early stage, it is possible that you may be able to arrest it by free local depletion, and other antiphlogistic means. In the case which was under treatment in the Meath Hospital, the symptoms had lasted for a considerable time before the disease exhibited any remarkable violence. The man was admitted on the 7th of February, and at this time the disease had been five weeks in existence, having begun at the lower part of the limb, and extended gradually upwards, until it involved the whole leg and thigh. Yet it is very probable that this patient might have been saved, if proper means had been taken to arrest the inflammation of the vessels at an early period. Baron Dupuytren has published a case, in which it appeared that this disease was setting in, but was checked at once by bold antiphlogistic treatment directed to the affected limb.—*Ibid, September 6th*, 1834.

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27. *On the Employment of Blood-letting in Scarlet Fever.*—The *Edinburgh Medical and Surgical Journal* for July last, contains an interesting communication from Mr. A. Dewar, of Dunfermline on this subject. A dissection made of a child which had died of scarlet fever on the sixth day of the disease, and which exhibited unequivocal evidences of inflammation of the mucous membrane of the fauces, pharynx, trachea, bronchi, stomach, parts of small intestines and brain, made early in life a strong impression upon Mr. D. and led him to doubt whether the remedies usually employed were sufficient to conquer the inflammatory action, which, he regards as the cause of the morbid phenomena of the disease. The many mortifying failures which he experienced in his own practice and witnessed in that of others, led him many years ago to resort to general bleeding in the treatment of the disease.

"During the last twenty years," says Mr. D. "I have witnessed four epidemics of scarlet fever, and for two years past it has prevailed, and still continues to prevail, to a great extent in this town and neighbourhood. Since the 1st of July, 1833, I have attended 183 persons labouring under this disease in its acute stage, *i. e.* with the eruption *still present* upon the body, and out of that number it has been my good fortune to lose only *two*. Nor must this small degree of mortality be altogether ascribed to comparative mildness in the charac-

ter of the disease. As a proof that the present epidemic has not been a slight one, I may mention, that, in this town and its vicinity, upwards of 150 persons have died of scarlatina within the last two years.

"The gratifying success now mentioned, with which the cases occurring in my practice have been attended, is to be attributed to the early and efficient employment of general blood-letting. In every case in which the remedy was properly used, I have invariably found the symptoms greatly mitigated, and in many the disease wholly and suddenly subdued. To accomplish this purpose, however, a scanty or long-deferred blood-letting will not suffice. It must be practised, as in other cases of acute inflammation, so as to produce a marked impression on the circulation, while the quantity drawn must be so considerable as to make it probable that the impression will be permanent. When, therefore, I had an opportunity of seeing the case from the commencement, I preferred drawing blood when the eruption had decidedly appeared upon the breast, but had not spread over the rest of the body. I selected this time chiefly to prevent all ambiguity respecting the nature of the disease. I likewise preferred the evening for the purpose, as I generally found, that, if the bleeding succeeded in breaking the force of the fever during the evening exacerbation, the disease was more certainly subdued than if the blood was drawn during the morning remission. On all occasions I have found it necessary to bleed, whatever was the age of the patient, to complete relaxation. The bleeding when thus practised is immediately followed by diminution of the heat of the body, of the force and frequency of the pulse, and of the head-ache and sore throat; and the eruption entirely disappears, and in many cases scarcely again becomes visible. While the blood yet flowed, many patients have expressed in strong terms the relief they enjoyed. I myself passed through the disease in November, 1833, and can speak from personal experience of the soothing influence which the remedy exerts over the feelings of the sick. None can know but those who have felt it, the sudden and delicious transition which I experienced on being bled, from burning heat, general restlessness, and confused thoughts, to perfect quietude and self-possession."

Mr. D. was for some time in the practice of setting the patient erect, and allowing the blood to flow until paleness, faintness or vomiting was produced. This he has more recently found not to be sufficient. The mere relaxation, especially, if it has been produced by the loss of a small quantity of blood, seems to produce only a very temporary interruption to the progress of the disease; from this state the patient soon rallies, and the fever resumes its force. Of late Mr. D. has bled all persons who had passed the period of mere infancy in the horizontal posture, and when he has obtained what he considers a proper quantity of blood, he raised them into the erect posture till relaxation took place. In this way he thinks he has avoided the necessity of repeating the bleeding.

Although the commencement of the eruption is without doubt, the time at which blood-letting can be practised with the greatest confidence of success, yet, while the pulse continues strong, and there is reason to believe that effusion has not taken place into the head, Mr. D. has not hesitated to bleed, and has never had reason to regret it, indeed he says he has succeeded on several occasions, where he is convinced no other remedy would have availed to save the life of the patient.

"Ulceration of the throat," observes Mr. D. "is one of the most severe and painful symptoms that accompany this disease. It is the consequence of the inflammatory action which prevails throughout the whole of the mucous membrane. Though it is probable that ulcerations are more frequent in the throat than in any other part of the mucous membrane, yet they are, without doubt, often to be found in the bronchial membrane and intestinal canal; and I am convinced, that, if dissections were carefully performed, they would be found

to prevail more generally and extensively than has hitherto been believed. No treatment can be more unsatisfactory than the leeches, the gargles, and the liniments, which are in common use for the cure of this untoward symptom. In truth, the treatment of the sore throat proceeds upon a defective knowledge of the pathology of the disease. The depletion is directed to the throat, as if it was the only part of the system labouring under inflammatory excitement, while in reality it is only one link in the chain of general inflammation in that particular structure. If this statement require confirmation, it is obtained in the fact, that, since I have employed general bleeding in the manner described, I have not had occasion in any of the 183 cases I have mentioned, with a single exception, to apply a leech for the cure of the sore throat, although I have seen several die of ulceration in the throat, who had been treated in the usual way. In every instance the pain in the throat was relieved by the bleeding, and readily and speedily yielded to the most ordinary means, and, indeed, in a great majority of the cases, required no special treatment at all.

"I have invariably bled the patient until the eruption *disappeared*, and in a considerable proportion of the cases it did not return, and even when it did return, it was much less diffused and less fiery in appearance. The scholastic and imaginary terrors, lest the eruption be interfered with, I have long disregarded. I look upon the eruption as the evidence of the inflammatory state, and the fever as symptomatic of the inflammation; and I find that the eruption and the fever for a certain period advance or subside together. It is true that the fever often continues after the eruption has ceased, but in these cases it is prolonged by organic lesions produced by the inflammatory action in some internal structure. Out of the 183 cases, 147 were bled, and in all the eruption was essentially diminished, in many finally removed; yet not in a solitary case did any unpleasant consequence follow. The recoveries were uniformly rapid.

"Some speculatist will probably say, that, as the morbid matter is prevented by the bleeding from 'coming out,' the person will not be protected from a recurrence of the disease. Time alone can decide on the validity of this objection. I can only say in answer to it, that I have now known many persons who were thus treated, exposed, again and again, to the contagion, without being affected by it.

"It is gratifying to add, that I have not had even the approximation to a dropsical symptom. I have seen during the last two years fifteen cases of dropsy after *scarlatina;* but they all occurred in persons who had either received no medical treatment, or in whom the treatment had been conducted on different principles from that which I have been recommending. In none of these 183 cases has there been the slightest tendency to dropsical effusion.

"The two cases which I saw *during the eruption*, and in the treatment of which I proved unsuccessful, were instances of congestive fever. The onset of the fever was severe, and the reäction imperfect. The eruption appeared, but was pale, and fluctuated; and the face, hands, and feet, continued cold throughout the disease. The one died on the fourth day, the other passed on to deep typhus, and ultimately sunk apparently from exhaustion.

"The discredit into which blood-letting has fallen in the treatment of scarlet fever, has probably arisen from the want of due attention to the circumstances in which it has been prescribed. It is a remedy of great efficacy for good or for evil. If used at random, and without a careful discrimination of the circumstances of every individual case, it will, assuredly, justify the reprobation which Dr. Currie has thrown upon it; and may prove 'a fatal practice.' If used early, and in insufficient quantity, it will only diminish the strength of the patient, without lessening the force of the fever; and if delayed too long, it will accelerate the effusion into the head, to which the disease is fast hastening. If, on the other hand, it is practised at the proper time, and in sufficient quantity, it will prove a means of cure, safe and successful, far beyond any other with which I am acquainted.

"It will be objected, I dare say, that depletion, more especially ample depletion, will be unsuitable to some epidemics. There are certain conditions of the atmosphere, or rather certain unknown causes, under the influence of which, scarlet fever, (and indeed any other fever,) may assume an unusually malignant character. By this I understand that these causes, whatever they are, so modify the contagion, or the health of the individual, that the early stage of the disease is of unusually short duration, and the worst, or typhoid stage, is speedily developed. This I am willing to admit; but I believe it to be equally true, that the essential character of scarlet fever, I mean the inflammatory state is still present, and can be most successfully combated by its only appropriate treatment,—blood-letting; although certainly, greater promptitude and discretion are necessary in its application. The typhoid state is not the disease, but its consequence, and can only be prevented by removing the previous excitement. The free but cautious and seasonable depletion, which has robbed typhus itself of many of its terrors would, I doubt not, be more successfully directed to the cure of malignant *scarlatina*, than all our other remedies put together."

Mr. D. has related several cases illustrative of the prompt benefit resulting from his method of treatment, two or three of which we subjoin.

"Miss G. aged thirteen, was seized on the evening of the 30th of March, 1834, with languor, pain in the back, and sore throat. During the night she was very hot, extremely restless, and the morning of the 31st in some degree incoherent. I saw her in the afternoon. Her face was flushed, her eyes red, she tossed in bed, was drowsy, and it required an effort to rouse her to consciousness. Her neck was stiff; her throat swelled, very red and painful; skin intensely hot; pulse 125, and strong; her neck, chest, and arms, were covered with the eruption of scarlatina, to the contagion of which she had been exposed. She was raised in bed, and bled to about a pound, when she became faint and the eruption entirely disappeared. She expressed great and instant relief from the bleeding. Two hours after she sat up in bed and took tea. About nine at night a pailful of milk-warm water was poured over her body, after which she slept well. Next morning her pulse was 90, the pain of the throat greatly relieved, and her general feelings very comfortable; the eruption scarcely perceptible. A tea-spoonful of Epsom salts acted gently on her bowels. At night the tepid affusion was repeated. Next day she was so well as to be occasionally out of bed. Took gruel and tea with toast for food. No other remedy was used. On the fifth day from the attack she was able to leave her apartment."

"In the autumn of 1833, I was requested to visit a young woman, aged fifteen, on the fifth day of her confinement to bed, and the third from the appearance of the eruption. She lay prostrate in bed, was drowsy, and could with difficulty be roused to even imperfect consciousness. After a few moments of comparative stillness, she tossed from side to side in bed, and moaned constantly. The restlessness and moaning, with scarcely any cessation, had continued during the preceding twenty-four hours. Her eyes were red, the vessels of the conjunctiva being minutely injected with blood. Her skin was intensely hot, and impressed the fingers with a very peculiar pungent sensation. The distinct eruption had disappeared, but there remained on various parts of the body, particularly the arms and legs, large patches about half the size of the hand, of a dark-red colour, resembling that of venous blood. The tongue was red, and universally excoriated. She complained when the epigastrium was pressed upon. The arterial pulsation in every part of the body was forcible and frequent. The danger was most imminent. Without delay, but not without hesitation, I drew blood from the arm. When about ten ounces had flowed she became faint. This quantity I regarded as insufficient to break the force of the disease. I therefore took the pillows from beneath her head, and put my finger on the wound till she rallied, and then withdrew other ten ounces

of blood. After the bleeding she slept, and seemed more placid. In five hours the strength of the pulse and heat of the skin had returned, when she was again bled to a pound. During the night she was quiet, perfectly coherent, and slept occasionally. In the morning she was so collected as to give a distinct account of her sensations. She complained of pain, and a sense of knocking within the head; her sight was perfect, and the colour of the eye was natural, but the expression wild. The heat of the surface was still very great; but the red patches had entirely disappeared. The pulse was strong and frequent; and the tongue raw. I again bled her to about twelve ounces, and gave her after a short interval, a small dose of Epsom salts in large dilution. From this time the fever did not return with any violence. The only other remedies were tepid washing for several nights, and small doses of sulphate of magnesia to regulate the bowels. She recovered rapidly.

"On the 20th of January, 1835, a boy, five years of age, was confined to bed with a hot skin, sore throat, great thirst, strong pulse, restlessness. He was covered with the eruption of scarlet fever. He was bled to faintness. In the evening I found him running about the room. He was washed at bed-time, and took a small dose of castor oil. No other remedy was used. Next day he was in the parlour."

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28. *Hydro-ferro-cyanate of Quinine in Intermittent Fevers.*—Dr. Gouzee, in his clinical report, in *Observateur Méd. Belge*, June 1834, of the cases treated in the Military Hospital of Antwerp, during the first quarter of 1834, quotes three cases of intermittent fever, completely cured by the administration of a single grain of hydro-ferro-cyanate of quinine, half an hour before the paroxysm.

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29. *On the employment of Sulphate of Copper as a remedy in Croup.*—The praises lavished on the use of sulphate of copper against croup by Dr. Hoffmann of Darmstadt, in 1821, in Hufeland's Journal, and reiterated in 1826 in the Journal of Harless, determined Dr. Droste to subject it to trial; and this he has done for the space of seven years, apparently with great success; since during that time he has not lost a single patient,—a very extraordinary circumstance, even allowing that several of the cases were not severe. He states, that he has himself been surprised at the celerity with which the alarming symptoms were, as it were, extinguished after the administration of this salt. He has not recognised in calomel the efficacy ascribed to it by several distinguished practitioners. The first objection to its employment is that it acts two slowly; the second, its action upon the lymphatic system, when administered in large doses or repeatedly, or for a long time. In the latter case he believes that it renders the fibrine of the blood less plastic and more watery, and the children become cachectic and dropsical.

As croup owes its existence to an inflammatory irritation of the mucous membrane of the air-passages, which induces a profuse secretion of lymph, or mucus susceptible of being converted into false membrane, moulded on the laryngeal and tracheal canal, the first indication is to rescue the patient from the imminent danger of suffocation by clearing the air-passages from the mucus with which they are filled, and the false membrane, by which they are lined. This is not effected by means of calomel, unless at the same time be employed its ordinary adjuvants, as blood-lettings, emetics, rubefacients, vesications, and revellents; while the sulphate of copper in a large majority of cases is alone successful in effecting this object.

A full dose of the salt, that is, one, two, or three grains, produces immediately, or at the end of some minutes, violent vomiting, which forcibly detaches the false membranes; and, however insufficient the dose may have been, it is unnecessary to administer a second. Other emetics, on the contrary, when given in a large dose, often occasion *hyperemesis*, their action continues long, they induce diarrhœal symptoms, always useless, often dangerous, and in no

case do they act according to the representation of Dr. Droste, so efficiently as the sulphate of copper. In a small dose, blue vitriol maintains a slight uneasiness, which terminates in profuse transpiration, or vomiting, which finally detaches the rest of the plastic exudation, which is heard wavering in the windpipe and *bronchi*. The voice then becomes clear, and respiration is more easy.

Weinhold admits that copper in a small dose, that is, in a dose too weak to excite vomiting, exercises no deleterious influence on the organism, but that it becomes dangerous when vomiting follows its administration. The contrary proposition appears to be the true one; for in a small dose it is absorbed, and gradually induces danger, especially if the organism be not accustomed to resist the injurious influence of external agents, unless, it is added, the remedy be administered in the homœopathic dose, in which case, though it does no mischief, yet it effects no benefit, because in the infant *belief is inert*.

Dr. Droste does not allow with Dr. Hoffmann, that the employment of the sulphate of copper supersedes the use of other remedies, as local bleeding by means of leeches, if the symptoms demand such remedies. In point of fact, in his cases, he orders not only local bleeding, but the application of blisters. He employs also powder of *digitalis*, or tartrate of antimony as antiphlogistics, subcarbonate of ammonia as an expectorant, purgative glysters, and the *potio Riverii* in somes cases, and *spiritus Mindereri* in others.

The method of treatment consists in giving at the commencement one grain of blue vitriol to an infant under two years, two grains to a child of from two years to four, and three grains to a child between that period and eleven; a dose which is followed by almost immediate vomiting. If by this method the symptoms are not entirely subdued, sulphate of copper is then given in doses of one-fourth or one-half of a grain every two hours, according to its effects and the abatement of the disease. Of these small and subsequent doses, it appears from the cases to be rarely requisite to give more than three or four.

Such are the reported effects of this remedy and method of treatment, as represented by Dr. Droste. It is much to be desired that the author had been a little more detailed and particular as to the exact characters of the cases, as to whether he had really never failed in curing croup by this remedy, as to the subsequent course of the cases, and whether any effects were left by the action of the blue vitriol upon the stomach. We must say, that a detail of the effects of a remedy in which there had been some unsuccessful cases would have been more calculated to produce a favourable impression than one in which there are no instances of failure. Cases of invariable success inevitably lead to the conclusion, that many of them must have been very slight, and that the remedial agent employed had little to do with the result. They prove, in fact, too much.—*Edin. Med. and Surg. Journ. July*, 1835, *from Heidelberg Clin. Annals, Vol. X. No.* 2, 1834.

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30. *On the Employment of Narcotine in some Cases of Nervous Debility.* By M. Nauche.—Opium contains several principles, which exert a different action on the elementary tissues of our organs. Morphine and codeine are excitants of the fibro-vascular systems, and sedatives to the cerebro-nervous systems; narcotine appears to be slightly sedative to the fibro-vascular, and powerfully excitant of the cerebro-nervous systems. M. Bailley believes the last named article inert; he has prescribed it in doses of from fifty to sixty grains, without witnessing sensible effects. M. Nauche has found it to exert a very powerful action in small doses. The difference in the results of the experiments of these two practitioners appears to have arisen from M. Bailley having given pure narcotine, and its being soluble only in acids, ether, and fatty matters.

When a lesion made with a cautery or blister is powdered with narcotine, the secretions from its surface diminish, or are entirely suppressed.

When given internally, it produces agitation, increases the courage, and exalts

the powers of innervation of the brain. It is probably to this principle of opium that the Turks owe their mental excitement, and the fury this substance induces in them on the eve of battle.

M. Nauche prescribes narcotine to persons in a state of habitual low spirits, and he has found it relieve this condition. He has also given it with advantage in some cases of incomplete amaurosis, in paralysis, and old nervous affections of the stomach and bowels.

The dose, when employed externally in frictions, is from three to four grains in an ounce of lard; and when used internally, from half a grain to one or two grains daily, incorporated with butter of cocao in the form of pills, or dissolved in ether, and given in drops in an appropriate liquid.—*La Lancette Française, January 17th*, 1835.

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31. *Epilepsy cured with Indigo.*—The utility of indigo as a medical agent was first pointed out by Dr. Grossheim, a Prussian physician. The results which he obtained were favourable, and Dr. Ideler was accordingly appointed to make a set of experiments on patients affected with epilepsy. Twenty-six patients were treated, and of these six recovered perfectly; three were apparently cured, but from eight to twelve months afterwards suffered a relapse under the influence of causes which of themselves alone were sufficient to generate epilepsy. Eleven patients were essentially improved, and of the whole number treated, only six experienced no change. The effects of indigo on the animal economy are in no ways disagreeable or dangerous; at first the patients vomited frequently, without any straining or derangement of the digestive organs, after a few days this ceased, and the patient had six or eight stools a day, sometimes accompanied with slight colicky pains; after a short time the purging diminished, the matter passed assumed a fluid character, and this state continued as long as the indigo was administered, without the appetite or digestive organs being injured. The useful reaction of the remedy on the nervous system was proved by the fact, that the epileptic attacks were more severe at the commencement, and seemed to assume a higher degree of intensity, but they soon became less frequent and violent, and at length disappeared. The remedy was commonly given in the form of confection with some aromatic powder, or on other occasions simply by itself. The dose to begin with is one scruple, which may be increased to a drachm after a short time, and gradually carried to half an ounce or an ounce.—*Lancet, June 6th*, 1835, *from Berlin Medicin. Zeitung. No.* 6.

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32. *Hydrochloric Acid as a Cure for Lead Colic.*—M. Gendrin communicated to the Academy of Sciences at their sitting on the 12th of December, 1834, some new observations on the treatment of lead colic. M. G. has found that the curative action of the sulphuric acid is very slow when lead colic is produced by the deutoxide of lead, (minium.) The sulphuric acid has always succeeded as a prophylactic in manufactories of carbonate of lead. In those of minium it is powerless; but M. G. announced that he has ascertained that the diluted hydrochloric acid cures the symptoms caused by the deutoxide of lead, with the same rapidity that the sulphuric acid cures those produced by the salts and protoxide of the metal. He hopes that it will also succeed as a prophylactic.—*Journ. Hebdom. Jan. 3d*, 1835.

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33. *Inhalations of the Vapour of a Decoction of Belladonna in Asthma.*—The *Gazette Médicale* for December 27th, 1834, contains an interesting memoir on this subject by M. Magistel. Of eleven persons affected with dry asthma and convulsive cough, to whom the author has administered these fumigations, nine were cured, and the two others relieved. M. M. commences with two drachms of the leaves of belladonna boiled in a pint of water, and the vapour inhaled by means of a convenient apparatus. The quantity of the belladonna is gradually increased to half an ounce. The aqueous extract may be substituted for the leaves, in doses of fifteen to twenty grains in half a pint of boiling water.

34. *Amenorrhœa Cured by Turpentine Injections.*—Dr. Elliotson has successfully treated in North London Hospital, two cases of amenorrhœa, by turpentine injections. The first case was a girl aged eighteen, in whom the catamenia had disappeared about four months before, in consequence of her having caught cold. She was in good health; the pulse 72, and full; she is, however, subject to swelling of the ankles. She was immediately bled to twelve ounces; and an enema consisting of half an ounce of oil of turpentine and a pint of decoction of barley was ordered to be administered every day. On the 5th of May the catamenia appeared, and she was discharged on the 12th quite well.

The other case is that of a girl, aged sixteen, who was admitted April 14th. The catamenia had disappeared about four months previously, without the cause being known. She appeared on her admission to be in good health; her pulse was 78, and rather full. Ten ounces of blood were drawn, and an injection similar to that which was employed in the last case was administered. The catamenia appeared on the 18th, four days after her admission. The enemata were discontinued, and the catamenial discharge ceased on the next day; they returned on the day following, and finally disappeared two days after that. She was bled to twelve ounces, and discharged quite well on May 12th.

Dr. Elliotson, in making some clinical remarks on these cases, said that he was induced to employ the turpentine injections in cases of suppressed menstruation from the circumstance of turpentine being considered an excellent emmenagogue when taken internally, He consequently thought that it might be successfully used in the form of enema in amenorrhœa, as it was known that when it is employed for the removal of ascarides it is much more effective when administered per anum, than when given by the mouth. He had employed this remedy in the case of a lady who was partially insane in consequence of the suppression of the catamenia. For eighteen months she had used all the established means for the removal of the disease, without effect, but the second injection of turpentine produced the menstrual discharge, and the insanity dependent on its retention was removed. It was not, however, always so effectual. He had employed it in a case now in the hospital, without success. Two injections had been given daily for some time, but the catamenia had not appeared. He thought that he had given the turpentine a fair trial in that case, and had therefore discontinued it. He had since ordered a slight injection of the liquor ammon. subcarbon. per vaginam, as recommended by an Italian physician, but without as yet doing any good.—*Lancet, July 25th*, 1835.

SURGERY.

35. *Breschet's Operation for the Radical Cure of Varicocele.*—The honour of increasing the domain of curative surgery, by a radical treatment of varicocele, appears to have been reserved for M. Breschet. This distinguished surgeon has, in fact, devised a plan, simple as it is ingenious, by which the most inveterate scrotal and spermatic varices are completely and expeditiously removable. I shall proceed to lay before your readers a brief account of this plan, accompanied with a case in which it was employed. I make choice of the first case in which M. Breschet operated, in order that the attendant difficulties of a first trial may not be concealed, and, at the same time, that the timid may not imagine them greater than they really were.

The patient was a servant, æt. 29, robust, and of strong constitution, who, so early as the age of fifteen, had perceived a difference in the conformation of the testicles. Some years afterwards, a tumour and varicose dilatation of the left scrotal veins became evident. The patient was frequently obliged to give up his ordinary work. He was admitted into the Hôtel-Dieu, May 27th, 1833.

The diagnosis of the affection was easily established; the usual symptoms of

spermatic and scrotal varicocele existed in a very marked manner. Many of the dilated veins of the scrotum equalled in size the auricular finger; and a fasciculus of vessels, united so as to form a considerable mass, originated at the cauda of the epididymis, from which point they followed the course of the cord to the external abdominal ring. The vas deferens was recognised by the characters which are peculiar to it.

The usual palliative treatment was prescribed, and its use continued during a month. The veins of the cord and scrotum, during that period, became slightly diminished in size, but the increase of volume, which followed the erect position, clearly indicated that the treatment had been, indeed, but palliative. Pressingly urged by the patient, M. Breschet thought of putting into execution a mode of treatment for a radical cure, the idea of which he had previously conceived. The principle upon which it was based, was the obliteration of the affected vein *by compression.* The compression was at first produced by small iron pincers, the pressure of which always equal, and resulted from the simple elasticity of the branches of the instrument. But the difficulty of using these pincers, their occasionally too great pressure, and the impossibility of padding their metallic surfaces, induced M. Breschet to use in their stead others so formed, as to permit the part destined to come in contact with the scrotum to be covered with soft linen, or leather, and the pressure to be graduated at will, by means of screws.

The instruments were at first applied on the veins of the scrotum, at the extremity of two of the most voluminous of them; care being taken to leave no considerable anastomosis between the two points compressed. Their presence determined slight local pain, and the trifling inflammation which followed, was combated by emollients, resolutives, and repose. On a second application, the pain was much less considerable; the graduated compression caused a thinning of the skin, and, bringing the two opposed portions of that membrane into contact, produced a dry eschar, solid, thin, and transparent, resembling parchment. Its detachment was followed by an ulceration of much less extent, and less painful than in the former instance. These ulcers were perfectly cicatrized in a few days; they produced no hæmorrhage. The vein remained full of clotted blood; this blood was gradually absorbed; no inflammation took place; and subsequently all traces of the existence of the vessel had disappeared. The different veins of the scrotum were successively treated in the same manner.

This success was, however, incomplete. The spermatic veins still remained. The application of the instrument to them was not so easily effected. They were surrounded by a thick skin containing fat, and the vas deferens was in their immediate vicinity. The small size of the nerves and arteries prevented their being drawn aside. The accidents to be apprehended were pain, violent inflammation, formation of a deep eschar, and denudation of the cord. For this new application the instruments were modified, so as to offer a larger surface to the part affected, and to present a curve, which should prevent the pressure of the fold of the skin. The vas deferens was excluded. The pain on the application was considerable, but removed by local means. The instruments were kept on seven days; one placed as near as possible to the external ring, the other towards the inferior part of the cord. They determined an inflammatory swelling of the parts comprised between the two pincers, and produced a superficial eschar of the part on which they immediately acted, combined with an adhesion of the two opposed cutaneous surfaces. The consequent ulcerations were cicatrized in less than fifteen days; before which time the cord had lost its knotty feel. There, however, still existed, at the cauda of the epididymis, a mass of vessels extending as far as the place of the last compression. Two other pincers were applied; one immediately before the testis, which was drawn backwards, the other two inches higher up. They were kept on the same number of days as the preceding, and followed by some pain, inflammatory swelling, and eschars of the integuments.

It deserves remark, that the inflammatory symptoms, after this last opera-

tion, were more violent than before, and less promptly removed. The instrument placed above the testicle produced a perforation of the skin, and a solution of continuity resembling that produced by a seton. The inflammation and swelling were considerable; an abundant oozing of a sero-purulent matter existed during fifteen days, from the ulcer. These accidents were got under by emollient cataplasms and repose, and at the same time the varicose mass which had existed at the bottom of the scrotum, was converted into a small tumour, in which no trace of vessels was discoverable. The disappearance of the swelling soon permitted an examination of the testicle, which had been long lost amid the vast fasciculi of vessels. Its nutrition was found to be unimpaired, and its volume equal to that of the opposite side. The cure was perfect at the end of November.

The length of time occupied in the cure of this case, is by no means to be attributed to the method employed in its attainment, but to the various difficulties encountered in devising and having made the instruments employed, and to the caution necessary in the first trial of an operation of which the ultimate results could not, *à priori*, be fixed with any degree of certainty. M. Breschet has since operated in numerous cases, both in public and private practice, with perfect success, and obtained in a much less time. I have myself seen two cases treated by him at the Hôtel-Dieu, in which the cure was perfect in from four to five weeks.

It is exceedingly important that the compression be more than sufficient to induce an adhesive inflammation, with occasionally slight suppuration of the coats of the veins; such an effect would not only be insufficient, but might be injurious, from the propagation of the inflammation along those coats, or from the purulent infection of the blood. The pressure should be forcible enough to destroy the life of the part, but in a gradual manner. The mortification is confined to the part immediately acted on.—*Lond. Med. Gaz. Dec. 13th*, 1834.

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36. *Operation for Contraction of the Fingers, with Clinical Remarks.* By Cæsar Hawkins.—Thomas Coffee, æt. 30, was admitted into St. George's Hospital, January 14th, under the care of Mr. Hawkins, in consequence of a deformity of the left hand, which seriously interfered with its use. The little finger was kept permanently contracted in the bent position, so that the back of the first phalanx was always presented to any object which he wished to grasp, the joint being directed towards the root of the thumb. There was a broad, thick piece of skin and subjacent substance running from the centre of the palm of the hand, half way down the first phalanx, and partially towards the second, the base of which in the palm seemed, when the finger was stretched, to have a narrow band, looking just like a flexor tendon in shape and size, running up towards the wrist, the extension of which caused a good deal of pain. The ring finger was also partially contracted in the same way, but nothing like a tendon from this finger could be perceived connected with the palm.

This contraction had gradually taken place during the last five years, during which time nothing of any consequence had been done for him, and the inconvenience being now considerable, he wished it, if possible, to be relieved.

Mr. Hawkins ascertained, by moving the fingers in different ways, that there was no adhesion of the tendons, and that the contraction was in the fascia only and determined to divide the contracted parts. Before operating, however he gave the patient two doses of calomel and haust. sennæ, to prevent the inflammation which would otherwise probably ensue; and on the 22d he performed the operation, which he explained afterwards to this effect:—

The little operation which you have just seen, is one which, perhaps, you have not before witnessed, as it is very seldom done; partly because the disease seldom produces so much inconvenience as to induce the patient to submit to it, and partly because its nature is not well understood; for it is generally supposed to be a contraction of the tendon of the flexor muscle, and that its divi-

sion would be very troublesome, from inflammation of its sheath, or that it would render the finger useless afterwards. It is an affection which I have, however, repeatedly seen, and it is remarkable that it almost always selects the little and ring fingers, and consists in a slow inflammatory action in the fascia of the palm of the hand, going on for many years, (in this instance for five years,) before it produces very great contraction, and arising, (as in this patient,) without any known cause. The only description of it with which I am acquainted, is one by Dupuytren, who seems to have frequently operated for it on the principle which I have adopted here. The portion of fascia affected, was that which comes from the annular ligament, and divides near the base of the fingers, so as to embrace the sides of the little finger, and one side of the ring finger; and what I did for it was this.—I first made an incision, about three-quarters of an inch long, in the centre of the palm, across the base of that portion of fascia which went to the fingers, and which started up when it was stretched, so as to look like a tendon. This being divided, a good deal of room was at once gained, and you saw the fat and nerves of the fingers at the bottom of the incision. I next made a semicircular incision more than half way down the little finger, at the fold which joins it to the palm of the hand, down to the tendinous sheath in the centre, and just avoiding the artery and nerve on each side. I next divided, in the same way, the side of the ring finger next to the little finger; so that by these incisions the portions of the fascia inserted into the fingers were divided, and the fingers could be extended almost to their natural length, allowing only for the shortening of the flexor muscle and tendon in five years, and which will, no doubt, soon yield. I also made an incision, in a longitudinal direction, through the thick substance formed by the skin and fascia together, which was there more than half an inch thick, thinking that this might, perhaps, allow more easily of extension. I gained nothing, however, by it, unless it facilitates, by suppuration, the removal of this hard substance, which has been formed by the continuance of the disease. I have placed, (as you saw,) a little lint in each cut, and have directed it to be placed on a splint, to keep the hand at rest, as there will perhaps be some inflammation from opening the fascia, and to keep the fingers stretched, which it will be necessary to do, even after the wounds have healed, for some time each day, or at night.

January 27th.—The wound being dressed, was found to be suppurating well; and there was no inflammation or swelling, such as might reasonably have been anticipated.

February 20th.—The incisions have quite healed, and the fingers are perfectly straight; so that there is every reason to suppose that he will regain the perfect use of his hand, all the fingers of which are a little stiff at present, from the use of the splint. The last few days, however, the splint has been left off, and the flexion of the fingers is improved. Almost the whole of the thick mass formed by the contraction has disappeared, and he has as much power over the fingers, which were operated upon as any other.—*Ibid, March 7th*, 1835.

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37. *Brodie on Prolapsus of the Rectum.*—I have just observed, that it is very common to confound *prolapsus of the rectum* with internal piles. This error is committed not only in common conversation, but by surgical writers; and hence it is that no good account, so far as I know, has ever been published of the first mentioned disease. But the difference between internal piles and real prolapsus of the rectum is this: in the protrusion of the former, the mucous membrane covering them descends, and may be seen below the anus; but it is only the mucous membrane, there is no descent of the muscular tunics; whereas, in the latter, the whole of the rectum comes down, and sometimes as much as twelve inches in length. I have never dissected a case of prolapsus of the rectum; but it is impossible to examine a genuine instance of this displacement in the living person without being satisfied that the muscular tunic is protruded, as well as the mucous membrane. There being such a marked difference be-

tween prolapsus of the rectum and internal piles, nothing can be more absurd or unscientific, than to confound these two diseases with each other.

It is not remarkable that the whole of the tunics of the rectum should sometimes protrude in this way. Look at what happens to the bowel above. Do you not find one portion of it slipping into another in the case of intussusceptio? and prolapsus of the rectum is just the same thing. In one portion of bowel slips into another, why should not the rectum slip out at the anus?

Prolapsus of the rectum occurs most frequently in children, and especially in those with large tumid bellies and costive bowels, where the whole mass of the intestine becomes too large for the cavity which contains it. Simple dissection will inform you why children are more liable to this disease than grown-up persons; it is because the prostate gland, urethra, vesiculæ seminales, and all these parts, are not so much developed as in the adult. The attachment of the rectum to the surrounding parts does not extend so high in children as in persons of mature age, while the reflexion of the peritoneum takes place lower down, and hence the rectum is more liable to be pushed out.

In adults, prolapsus of the rectum sometimes occurs as a consequence of piles. The patient having been liable to the protrusion of internal piles, and the sphincter muscle having been thus continually dilated, the rectum is more liable to slip out, as you may well suppose, than it would be if this dilatation had not taken place. However, in grown-up persons the disease is comparatively rare. I see it every now and then, but very seldom; and where you meet with it in the adult, it has generally began in early life.

When prolapsus of the rectum is combined with internal piles, you will see the latter at the upper part of the prolapsus—that is, close to the orifice of the anus, forming a zone around the gut; and the colour and appearance of the mucous membrane covering the protruded piles, is altogether different from that of the membrane covering the rest of the gut.

The inconvenience which the patient suffers from prolapsus of the rectum, varies very much in different cases. Sometimes it comes down occasionally after a costive motion only, and is easily pushed up; and when pushed up, it remains in its place till some accidental circumstance brings it down again. In other cases you return it, but the moment the patient begins to walk about, down it comes again; and in instances of long standing, the bowel becomes so fixed in its unnatural position, that you cannot return it by any means, and then other inconveniences follow. The rectum having been constantly protruded, becomes inflamed from friction, ulcerated, sore, tender, painful; and where the protrusion has existed for a long time, you will find it covered by a kind of cuticle.

Treatment.—When you are called to a child labouring under prolapsus of the rectum—and these are the cases that you most frequently meet with—you will almost invariably relieve him in the following manner:—Purge him with calomel and rhubarb occasionally; be very careful about his diet, that he does not eat a great quantity of vegetable substance, which tends to fill up the cavity of the bowel, while it affords but little nourishment; and every morning let some astringent injection be thrown up. The injection which I have generally used, is a drachm of tinct. ferri muriatis, in a pint of water; and two or three ounces, or more, of this, according to the age of the patient, may be injected into the rectum every morning, the child being made to retain it as long as possible. I never saw a case of prolapsus of the rectum in a child which was not cured in this manner.

If you are consulted about an adult labouring under this disease, and it has been consequent on a protrusion of piles, the first thing to be done, is to destroy the piles. Let the patient sit over a pan of hot water, and the sphincter muscle being relaxed and the parts distended with blood, the piles and rectum will all protrude together; you must then tie the piles, which you can easily do, your assistant holding the rectum on one side, while you apply the needles

and ligatures on the other. Having tied the piles, you return the rectum into its proper place; and you will probably find, that in curing the piles, you have also remedied the prolapsus of the bowel. But if the patient neglects himself afterwards, as the piles return, so the prolapsus returns with them.

Where the disease is not complicated with piles, in those cases which occur occasionally, in which prolapsus of the rectum has began in early life, and has continued to adult age, the cure is very difficult, and perhaps impossible. The patient must be retained in the horizontal posture, for then the rectum is much less likely to protrude than when he sits up; he ought not to sit up even for an evacuation, but should have a bed-pan. Whenever the rectum protrudes, it should be pushed up again; an astringent injection should be employed daily, and the patient should be put through a course of Ward's paste. This plan affords him the best chance of a cure, which he can have, but I will not say that it will always be successful. I remember trying it for a great length of time in a woman in the hospital, and after lying many weeks in bed, when she got up the rectum came down as before; nay, it came down sometimes when she was in bed, even in the horizontal posture. In these cases, however, you may employ with advantage the truss for prolapsus of the rectum, which I mentioned as applicable chiefly to bad cases of internal piles. There was a patient in the hospital, (a soldier,) who had, I suppose, eight or ten inches of the rectum constantly protruded, and it could not be returned. After trying various means for a length of time, he left the hospital as bad as when he came in, and I do not know what became of him. It occurred to me afterwards, that in such a case as this, it might be advisable to apply ligatures, and then cut off the protruded gut; for though the disease is not immediately dangerous, yet it must be regarded as ultimately so; and it might be worth while for the patient to run some risk at the time, for the chance of subsequent cure. I do not know that such an operation has ever been performed; but is it not deserving of consideration, whether we ought not to have recourse to it in certain cases? There is a natural cure of bad cases of intussusceptio, the analogy of which is in favour of the practice which I have just suggested. In the cases to which I allude, one portion of gut being protruded into another, the protruded portion is constricted by the edge of that into which it has passed; the circulation in it is stopped, and it sloughs away as if a ligature had been put round it. In this manner a portion of gut, eight or ten inches in length, has sometimes come away, and the patient has lived and done well afterwards. Several cases of this kind are on record; and I once had an opportunity of dissecting a patient who died when the sloughing process was taking place. If such an operation as I have proposed were to be had recourse to, the gut must be included in several ligatures, so that the orifice of it may not be obstructed, as it would be by a single one.—*Ibid, March 14th*, 1835.

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38. *Case of Ligature of the Subclavian, for the cure of an Aneurismal Tumour of the Innominata.* By C. Tarral, Esq.—I was requested by my excellent friend M. Laugier, surgeon to the *Necker Hospital* of Paris, to examine and give an opinion on the disease and treatment of the following patient.

M. Clery, aged fifty-seven, complained of troublesome catarrh, dyspnœa, difficulty in swallowing, and incapability of placing his body in any but the erect posture. His neck presented a tumour of the size of a large hen's egg, which pulsated synchronously with the radial artery. The tumour extended about two inches above the right clavicle, whose sternal extremity it had dislocated, and pressed against the trachea, which was visibly pushed to the left side. Outwards, it reached to near the middle of the right clavicle; downwards, to about two inches from the top of the sternum, which was here prominent.

Several large superficial thoracic veins covered the tumour, and anastomosed with the veins of the neck. These symptoms might have led to a belief that the subclavian and right carotid arteries were alone affected; but on carefully examining the tumour, there was great reason to suppose that the innominata,

and perhaps even the arch of the aorta itself, participated in the disease. The deviation of the trachea to the left side; the dull sound furnished by percussion on the first and second ribs, where no tumour was sensible to the eye; the difficulty of breathing; the peculiar resonance of the voice, which was of an œgophonic character, easily distinguished by auscultating the back of the chest, a symptom of great importance in these cases; the impossibility of feeling the termination of the tumour below the clavicle, joined to a consideration of the frequency of coëxistent aneurisms of the innominata and aorta, &c. were the principal sources from whence we formed that diagnosis. The tumour, which the patient attributed to a blow he had received, was now considered to be the principal cause of all his symptoms. M. Clery, although much weakened by his disease, was still in a tolerably good condition for an operation, to which he gladly consented.

M. Laugier having for several days administered opiates, determined, (12th June, 1834,) on taking up the right subclavian artery soon after it passes beneath the clavicle. Much against my wish, M. Laugier followed M. Lisfranc's mode of operating, that is, by cutting between, or, if possible, by separating the sternal from the clavicular portion of the pectoralis major muscle. But proceeding thus, the surgeon attained the artery with great difficulty, and only after having transversely divided the clavicular portion of the pectoralis muscle. The vessel was then isolated, and tied by a single silk ligature. The great dyspnœa which the patient experienced by extending the neck during the operation, necessarily rendered it tedious and painful, and it would now have been almost impossible to put a ligature around the carotid artery, which I proposed to M. Laugier, thinking it would afford a greater chance of success. The operator being always opposed to this view, we paid but little attention to the state of the vessel's pulsations.

The lips of the wound were brought together by sticking plaster, and the patient was put to bed. No visible change occurred in the tumour immediately after the ligature was tightened.

The following day, (13th,) the tumour was evidently smaller, its pulsations weaker, and the patient was able to sleep, which he had not done for several nights previous to the operation. The radial artery did not beat, the limb was natural and comfortable.

June 14th.—He felt much relieved, breathed easier, swallowed better, and demanded food, which was granted to him; the pulse in the left arm was good.

19th. The patient went on well until this day, when a slight hemorrhage from the wound took place; the blood was of an arterial colour. This accident returned several times, but entirely ceased on the 22d.

27th. The patient assured me that he now perceived that his trachea was resuming its natural position; he complained of pain in the shoulders and back; was constantly sitting with his chest erect, and his head bent forwards and downwards; the pulse in the right arm was sensible to the touch. The ligature still remained in the wound, which continued to suppurate; the veins covering the tumour were much diminished.

July 2d.—He complains of pain in his back; his cough torments him; the tumour in its most elevated point seems to beat more strongly than before the operation. Acetate of lead and digitalis, in small doses, were now prescribed.

9th. A violent paroxysm of dyspnœa came on, which was combated by bleeding; the cough continued; the respiration was very laborious; insomnia.

All these symptoms increased, and the patient expired on the 12th, one month after the operation, the ligature still remaining in the wound.

Post mortem inspection twenty-four hours after death.—The limits of this communication will not allow me to give a minute description of the various interesting morbid states which were discovered; what pertains especially to the operation will alone be noticed. On laying open the thorax we found a large aneurismal tumour of the arteria innominata, the pendicular length of which was five inches and a half, (French measure;) its breadth from side to

side was six inches five lines; the tumour evidently pressed against the trachea; the bronchi were considerably flattened. The aorta was also dilated; its arch, in its middle, measured six inches three lines in circumference; immediately after it gives off the left subclavian artery, its circumference was three inches; the inner membrane of the aorta presented numerous and common cartilaginous points. The arteria innominata was the real seat of the aneurismal tumour; its membranes could not be traced far; the sac was nearly filled by firm, dense, coagulated layers of fibrine; the lower part of the tumour contained more-recently formed coagula, and one coagulum, most probably formed since death, extended into the descending thoracic aorta.

The right common carotid artery, from its origin to within a third of its extent, was completely obliterated, and presented here and there singular valvular-like pseudo-membranes. The right subclavian artery, of natural diameter, was quite pervious to within half an inch of the point where the ligature was applied—that is, two inches ten lines from the internal mammary artery, or one inch eleven lines above the circumflex humeral artery. The ligature had divided the axillary artery, but was retained in the wound by a coagulum which had formed in its noose during the hæmorrhage, which probably came from the lower end of the divided vessel, which was much less firmly closed than the upper one, and into which the clot evidently extended. Besides, close to the lower mouth of the artery existed a tolerably large collateral branch, which may have been the cause of the hæmorrhagy, and the less perfect obliteration of this part of the arterial trunk. The subclavian artery was alone tied; the branches given off between the tumour and ligature, viz. the vertebral, internal mammary, thyroid axis, &c., were of natural size and appearance, and quite pervious. The left carotid and subclavian arteries were healthy. The vena cava superior was much compressed; the subclavian veins, pushed from their proper situation, were likewise flattened and partially obliterated, the collateral branches were considerably enlarged, &c. &c. The third and fourth dorsal vertebræ were carious or ulcerated at their surface, and covered by a fetid matter, which communicated with the interior of the lower and back part of the aneurismal sac. Exactly in this situation the trachea was extensively diseased; its inner membrane was thick and dark coloured, and presented on its surface a dirty gray mucus, its follicles very prominent, &c. The œsophagus was here found ulcerated, and communicated with the fetid matter of the diseased vertebræ; the lungs were engorged; the other viscera presented no lesions worthy of our present notice.

Here then is another case exemplifying the great difficulty of making a correct diagnosis of aneurismal tumours when situated in the neck and superior part of the thorax, a subject which has particularly attracted our attention elsewhere.* In the present instance, however, we were fortunate in forming a right opinion with regard to the principal vessels, and in adopting a rational surgical operation. Nevertheless many morbid lesions escaped notice; the complication of diseases and the similarity of their symptoms, was the source of error. Was it not plausible to ascribe the pain in the back, the pain in the throat, the difficulty of deglutition, &c. to pressure of the tumour? Was it not reasonable to suppose the origin of the right carotid and subclavian arteries likewise affected, especially the carotid, whose pulsations were exceedingly feeble just above the tumour? I regret not having examined this vessel more minutely during life; the patient could not bear pressure on the neck, it even produced syncope when applied by M. Laugier. From the slight examination of this vessel, we merely thought it implicated in the disease, not obliterated. But the most valuable fact in this observation is undoubtedly the decrease of the aneurismal sac, both the subclavian artery and its large branches being pervious and of natural size. This circumstance certainly tends most fully to establish the principle of the operation. May it not be considered most fortunate

* See Journal Hebdomadaire de Medecine, Paris, Sept. 26, 1829.

that the surgeon abstained from employing force, (which many practise,) in pulling the ligature away? for this course evidently might have caused a serious hæmorrhagy, by withdrawing the plug of coagulum which closed the mouth of the artery, and filled the noose of the ligature.—*Lancet, March 21st*, 1835.

39. *Chlorures of the Oxides of Sodium and Calcium in Burns.*—In 1825 M. Lisfranc conceived the idea of applying these preparations for the relief of the accidents produced by burns. Those medicaments act as astringents and sedatives, and not only prevent the increase of inflammation in the injured part, but also remove it almost entirely. The pain resulting from burns is developed under the influence of innervation; after a few hours use of the chlorures the patients suffer much less, and often not at all. By cutting short the intense action of extensive burns, their reäction on the constitution, and particularly on the intestinal canal, is avoided. It is unnecessary to mention, that as the state of stupor in which the patient is often plunged results from inflammation or innervation, this state commonly improves, or is dissipated, with the removal of the two causes.

When a solution of continuity without eschar exists, the chlorures of sodium or calcium possess in a high degree the property of producing a plastic exudation, which immediately becomes organized like a false membrane. The new tissue ordinarily is developed from the circumference to the centre, and in a short time fills up the solution of continuity, in the same manner as if a flap from the surrounding tissues had been laid down upon the part.

The chlorures determine the formation of false membranes, not only in the second degree of burns, but also in a degree much more advanced, when the eschars have come away, and the granulations are well developed. A point of much importance is the circumstance of the cicatrix being much more solid after this treatment than any other. It is formed, as has been mentioned, by means of a new tissue which covers nearly the whole of the denuded surface, the edges of the skin being very little displaced. Hence if the ulcer be situated on the lower part of the leg, the integuments cannot become too narrow.

Experience has also demonstrated to M. Lisfranc, that the contraction which always takes place in the cicatrix, is much less considerable in the species of false membrane produced by the action of the chlorures. It has been asserted that the chlorures of the oxides of sodium and calcium facilitate the fall of the eschars, to whatever cause they may be due; however, facts prove, that if the inflammation be violent and of a phlegmonous nature, the chlorures generally augment its intensity, and thus fail in their object, while, on the contrary, if it be slight, they diminish its force, and thus prolong the act of elimination. This has been peculiarly observed in thin patients, and in those in whom the eschar is dry and hard. Finally, as antiseptics, the chlorures are more injurious than otherwise, whenever the gangrene depends upon an excess of inflammation, and when the latter, notwithstanding the death of a certain extent of tissue, persists to a high degree. The chlorures of the oxides of sodium and calcium are more especially applicable to burns of the first and second degree. At first, M. Lisfranc was apprehensive of the intensity of the inflammation; but experience soon proved, that these remedies succeeded equally well in cases where the inflammation merely occupied the surface of the skin. The chlorures generally employed in cases of burns are at 3°, (chlorometer of Gay Lussac;) but the inflammation and idiosyncracy of the skin may require modifications. If the chlorure, at the degree mentioned, does not produce any sensation, it is not active enough. M. Lisfranc increases it to 4°, 5°, or even 6°. If, on the contrary, the application of the chlorure determines an itching heat, and a little pain, not lasting more than half an hour, the medicine is too strong and may augment the inflammation; the dressing must be removed, and a solution at one or two degrees employed. Finally, in order that the chlorures should produce the desired effect, the heat and itching sensation which they occasion, should not last more than five, ten, or fifteen minutes. In the com-

mencement of his experiments, M. Lisfranc applied the chlorure equally over all parts of the burn, but he soon perceived that the cure was much more rapidly attained in all points where the rete mucosum had been exposed; hence the remedy acts with less efficacy through the epidermis, and it is advisable, whenever it can be done, to remove this insensible layer of the skin.

The whole surface of the burn is first covered with a compress perforated in many places; above this a mass of charpie, at least two inches thick, and moistened with the chlorure, is placed; the whole is retained by a bandage. During winter, when the surface of the burn is very extensive, and the patient lies in a state of excessive stupor, the riddle-shaped compress should be warmed before it is applied; and according to the temperature of the atmosphere, the apparatus is to be moistened six or eight times per day. The dressing should be renewed every twenty-four hours.

M. Lisfranc was conducted to the employment of chlorures by the following circumstances. Some patients were affected with burns of the first and second degree, extending over at least two-thirds of the surface of the integuments. On the first day he followed the precepts recommended in surgical works; he opened the phlyctenæ at the lowest point, and applied goulard cerate, and charpie: the following day the inflammation had acquired an immense degree of intensity; the fever was high, and the effects of the reäction on the intestinal canal were visible: the patients were stupid, and exhibited the indifference peculiar to their situation in this state. Surgeons consider individuals thus affected as beyond the reach of cure. Under these circumstances, M. Lisfranc, who had already used the chlorures in cases of inflammation complicated with ulcers, thought of trying them, and succeeded in saving his patients. Since that period he has been equally fortunate. The following conclusions may be drawn from the principles laid down in the memoir before us:

1st. That the chlorures of the oxides of sodium and calcium, employed, according to the indications laid down, against burns, dissipate almost completely the pain, diminish the inflammation and innervation, and prevent any injurious reäction on the economy.

2d. That they often produce the cure of patients who would have certainly died with the ordinary measures.

3d. They hasten the cure and fall of the eschar, and produce much better cicatrices.—*Gazette Med. March* 21*st*, 1835.

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40. *Remarks on Excision of the Superior Maxillary Bone.* By James Syme, Esq.—To prevent this operation from being misapplied, and losing the confidence which may justly and advantageously be placed in it, the cases admitting of its effectual performance must be carefully distinguished from those in which, from the disease implicating the bones of the nose or the base of the skull, it cannot be of any use. As the external appearance in both these kinds of cases is not unfrequently very similar, the history of the disease should always be attentively considered along with its existing features. Head-ache, stuffing of the nose, protrusion of the eye, and expansion of the upper part of the face, must always be regarded as unfavourable signs, especially if observed primarily or early in the case. On the other hand, caution is required lest the operation be employed in cases where it is not really necessary, as when the tumour depends on a cyst containing fluid developed in the substance of the bone. The external appearance and consistence of such swellings closely simulate those of fibro-cartilaginous solid tumours, which, of all the morbid growths in this situation, are the most favourable for removal. But the diagnosis between them may in general be easily effected by pressing with the fingers over the surface of the enlargement, in one or more parts of which the bony shell is usually found so thin as to yield and crackle like a piece of parchment. Gensoul* relates a case in which the thickness of its parietes concealed

* Lettre Chirurgicale, 1833.

the existence of a cyst, and led him to undertake excision of the bone, in which he had proceeded so far as to dissect away the cheek from the tumour, when its true nature was discovered. But in all the cases that have come under my observation, there was a part of the shell sufficiently thin to be easily recognised; and the two following may be selected as examples.

A gentleman came from the country to have a tumour of the upper jaw removed. It depressed the palate, encroached upon the nostril, and elevated the cheek. At the most projecting part in each of these situations the tumour, though elsewhere of bony consistence, yielded to pressure, and recovered from it with a crackling sensation. Dr. Thomson, Mr. Turner, and I, who saw the patient together, agreed that his complaint depended merely upon a cyst, which would contract and be obliterated if freely opened. I accordingly evacuated a quantity of limpid fluid by making a puncture under the lip, after which the swelling contracted, at first rapidly, and afterwards more slowly, until it ceased to occasion any annoyance. Last summer a young lady from North Shields applied to me on account of a tumour of the lower jaw, which extended from the bicuspid teeth to the articulation. It was round and firm, and had been growing for three years, having been preceded by pain in the bone, which led to the extraction of the grinders at the part affected. In the most prominent point of the tumour, where it distended the cheek, and also in the situation of the gum, which was much expanded and flattened, I detected the characteristic yielding and resiliency of the thin osseous, or rather at these parts membranous, shell of a cyst, and did not hesitate to open the tumour by removing an elliptical slice from the alveolar region sufficiently large to prevent any chance of the aperture soon closing. Half a tumblerful of fluid, containing numerous shining scales of cholesterine, was evacuated. The patient suffered no inconvenience, and before long observed a remarkable diminution in the size of the swelling, which I understand has since gradually become smaller, and now does not equal that of a pigeon's egg.

In such cases it has been advised to employ setons, caustics, and other violent means to destroy the secreting action of the cyst, and induce a healing granulation of the surface; but there is reason to regard this practice as unnecessary and hurtful. That it is unnecessary will appear from the cases just related, to which others attended with a similar result might have been added; and that it is injurious seems probable from the following one. A young man had a large tumour of the lower jaw, which was ascertained to depend on a cyst in the bone. A seton was passed across it from the mouth through the cheek. Contraction followed; but a solid growth afterwards occupied the place of the former cavity. My opinion being then asked, I advised excision of the affected portion of the jaw, which was executed by the gentleman who had operated in the first instance.—*Edinburgh Med. and Surg. Journ. July*, 1835.

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41. *Extirpation of the Eye for Medullary Degeneration.*—Mr. Syme expresses it as his conviction, founded we think in justice, that it would be better for the interests of humanity and the credit of surgery if this operation were entirely abandoned. The melanotic disease of the eyeball has been repeatedly removed, if not with permanent success, at all events with relief of considerable duration; but the true medullary affection, such as is often met with at an early period of life, does not, he believes admit of any salutary interference. "If it could be proved," adds Mr. S. "that excision had been successful in a single well authenticated case of medullary tumour of the eye, it would be wrong to refuse the chance of benefit from the operation. But if the result of numerous trials, under every variety of circumstances, has been uniformly unfavourable, it must be cruel to repeat the painful experiment any longer. The only instance of alleged success met with in this country is that recorded by the late Mr. Wishart."* The operation was performed on a boy nine years of age, four

* Edin. Med. and Chirurg. Journal, 1823.

months after he had received a blow on the eye. "The left eye was dull, and presented a general turbid appearance; the cornea was transparent, but numerous vessels passed into it over the sclerotica. The pupil was moderately dilated and fixed; its margin was slightly serrated. In the posterior chamber an opacity was observed resembling a yellow dusky membrane, lining the whole posterior part of the eyeball, and perceived more distinctly when the eye was viewed laterally." Mr. Lawrence has remarked in regard to this case,* that "it is more analogous to those instances of brilliant deep-seated discoloration following serious accidents, than to the unequivocal examples of the medullary fungus." The justice of this suspicion was forcibly impressed upon me by a case which I lately saw with Dr. Combe of Leith. The patient was a little boy whose eye had been wounded some weeks previously by a pin-pointed arrow. The appearances presented by it were precisely those described by Mr. Wishart, but the brilliant yellow coating at the bottom of the ball, which, had it not been for the history of the case, would certainly have been ascribed to the presence of a malignant growth, was doubtless caused by an effusion of lymph; and not only the external appearances in Mr. Wishart's case, but also that presented on making a section of the extirpated eyeball, admit of the same explanation. "The diseased mass into which the retina had been converted, connected only to the optic nerve, floated loosely in various folds, occupying both chambers of the eye."—*Ibid.*

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42. *Simple Fracture of the Os Femoris—Reünion—Death at the end of Two Months—Dissection.* By James Syme.—Susan Barr, aged fifty-one, was admitted on the 2d of April, in consequence of having sustained a fracture of the left thigh bone, which she stated had happened the preceding evening from being thrown down by a man who ran against her while crossing the street. The injury having been ascertained to be seated in the upper third of the bone, the limb, properly supported by splints, was placed upon a double inclined plane.

On the 15th she was suddenly seized with sickness and vomiting, and then became extremely hot and restless, with dry brown tongue and quick pulse. In three or four days these unpleasant symptoms left her, and on the 20th of May the limb was found sufficiently firm to be freed from restraint. On the 27th she had a rigour and a return of her former symptoms, which continued with progressive aggravation until the 7th of June, when she died.

The fracture had evidently been comminuted. The broken surfaces remained *quite unconnected*, a soft bloody semi-fluid substance only lying between them. In the medullary canal there had been a deposition of osseous matter in a sort of granular state, and the edges of the fracture were united by bridges of dense bone. In this case, then, the *provisional* callus of the French pathologists was nearly completed.

It is a remarkable fact in the history of pathology, that Duhamel's theory of the reünion of fractures, which was founded on an erroneous analogy between the formation of wood and that of bone, has proved to be much nearer the truth than that of Haller and his pupils, who entertained correct opinions as to the formation and nourishment of bone. Duhamel supposed, that, in a case of fracture, the periosteum had its inner layer converted into bone, just as the inner layer of the bark of a graft is converted into wood, and that thus a connecting bridge was formed between the broken bones. When specimens were shown to him of the union extending through the medullary canal, he explained the appearance by alleging, that the *internal* periosteum had suffered a similar change; and when his attention was called to sections of old united fractures, in which a compact mass of bone occupied the seat of the fracture, he was satisfied with supposing, that the external and internal periosteum had united. Rude and crude, and ill-founded as this theory was, it approaches wonderfully

* Treatise on Diseases of the Eye, p. 623.

near the enlightened views of Breschet and Dupuytren, who have been the first to explain satisfactorily the process by which the every-day accident of fracture is repaired. The reader is no doubt aware that the explanation formerly admitted, of an organizable substance effused from the broken bones into the space between them, and gradually hardened into bone, is quite untenable; and that the process of reünion truly consists, 1, in the formation of a capsule surrounding the fractured extremities by thickening and condensation of the neighbouring tissues; 2, the deposition of bone in this capsule, and in the medullary canal; 3, the growth of bone from the surrounding osseous surfaces until the cavity is completely obliterated. The second stage is generally so far completed in from three to six weeks, that the limb regains its rigidity sufficiently to resist any moderate force, and the cure is then said to be completed; but the real cure requires at least as many months. The case that has just been related affords a striking illustration and confirmation of this process; since, if it were not for the provisional callus or bridges of new bone connecting the external edges of the fracture, the bone would still be flexible; and, in fact, one of the halves is flexible from the section having been accidentally made so as to leave the bridge more on one side than the other.—*Ibid.*

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43. *Ununited Fracture of the Humerus—Excision of the ends of the bone—Phlegmatia dolens of left thigh and leg—Recovery.*—An interesting case of this is recorded by J. Syme, Esq. in the *Edinburgh Medical and Surgical Journal* for July last. The subject of it was a farmer æt. 50, who came under Mr. S.'s care on the 7th of February. "He stated that two months before, his right arm had been broken by the wheel of a cart passing over it, that splints and bandages were applied, and that he was confined to bed for a fortnight. The splints were kept on for four weeks longer, during which he was allowed to walk about with his arm in a sling. It was then found that union had not taken place, and that the arm was perfectly useless, in which state it still remained. On examination, I found that the bone had been broken very obliquely; the lower end of it lay directly under the skin on the outer side of the biceps, and the upper one was felt quite on the opposite side of the limb, imbeded among the muscles. The limb could be bent in all directions at the fractured part, and the broken extremities were so perfectly moveable that it was evident no bond of union existed between them. To ascertain if any disposition to repair the injury still existed, I surrounded the limb very tightly with straps of adhesive plaster, then bandaged it firmly with a roller, and, lastly, applied pasteboard splints. At the end of a fortnight, the state of the arm was found precisely the same as it had been previous to this trial, and it became necessary to decide on some more efficient means of relief.

"I have seen the want of union, both in fracture of the humerus and in that of the forearm, attended with hardly any inconvenience, the bone having been broken transversely, and the muscles being equally balanced, so that though the limb was quite flexible at the injured part, in a state of repose, it could execute every exertion it was called upon to perform. In this case, however, owing to the obliquity of the fracture, the limb was entirely powerless, and the patient declared that, rather than be troubled with such a useless load, he would submit to amputation. Before resorting to this last remedy, it seemed proper to try some means for uniting the ends of the bone. The seton was the mildest that could be employed for this purpose, but the case did not appear suited to it, since it is only when the process of reünion has made some progress that the irritation thus occasioned can be of any service. From the extreme mobility of the broken surfaces, it was apparent that nothing lay between them likely to be converted into bone, and therefore the only method of affording relief was limited to the operation of cutting off the ends of the bone and placing them in contact.

"On the 24th, an incision about two inches in length was made near the lower

end of the bone, which was readily exposed, so as to have the rounded extremity removed by a saw. The other end was then sought for by cutting towards the part where it was felt, from the former wound. The depth of its situation prevented the application of the saw, but the cutting pliers proved sufficient to divide it. A splinter, about two inches in length, was thus detached from the shaft, and as its removal threatened to be attended with difficulty, it was allowed to remain, in the hope that union might be promoted by its presence. Pasteboard splints were applied, with proper bandages, and the patient was confined to bed. Great part of the wound healed by the first intention, a portion of it at the centre only remaining open and discharging a small quantity of matter. The patient suffered hardly any pain, and no constitutional disturbance. The dressing was changed every second day.

"On the 8th of March the patient felt rather hot and uneasy, and at 10 o'clock at night suddenly complained of intense pain in the left groin and calf of the leg. Very soon afterwards the thigh was observed to be swelled and painful to the touch. Next day the limb was much enlarged from the groin to the ankle. It was tense, elastic, and very sensible of pressure, especially in the course of the *femoral* vein, where an induration was distinctly perceptible. The bowels were moved with difficulty after repeated purgatives and injections. In the evening and during the night, he had very frequent black vomiting. Pulse 150. On the 10th, the vomiting was succeeded by a nearly incessant and violent hiccup. A blister was applied to the epigastrium. On the 11th the hiccup still continued, and the state of the limb remained the same. Twenty leeches were applied to the groin. On the 12th, the pain and tension were diminished, and by the 15th were nearly gone. In addition to the treatment which has been stated, it may be mentioned that mild laxatives were occasionally administered, and evacuations procured regularly by injections. The patient during the attack presented a very sunk appearance, and subsequently became much emaciated. For several weeks he could not assume the erect posture without feeling great pain throughout the affected limb. On the 3d of April he put on his clothes for the first time; and on the 12th it was found that the arm had acquired considerable firmness. On the 28th he went home, a distance of twenty miles, the arm being quite rigid, perfectly straight, and not perceptibly shortened. There was still a very slight discharge of matter, but this I understand has since nearly ceased.

"There being only three recorded instances of this operation proving successful in ununited fractures of the humerus since the case of Mr. White in 1760, I feel happy in adding another. The cases requiring it must be extremely rare, but when they do occur, it will be satisfactory to know that the cure may be thus accomplished even under circumstances rather unfavourable.

"But this case is perhaps still more interesting from the striking example it affords of an attack similar in all respects to the *phlegmatia dolens* of puerperal females occurring in a male. Other cases of the same kind are recorded, but none that I know of so well-marked. There can be no doubt, after the researches of Dr. Davis and other modern pathologists, that this very curious affection depends on inflammation of the great venous trunks; and it is not difficult to conceive why this should be apt to happen after the process of parturition. But what led to it in the present case cannot be so readily explained."

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44. *Case of Uterine Polypus removed by the ligature, in which the dilatation of the Os Uteri was produced by the administration of the Lobelia Inflata.* By R. W. Chapman, Esq.—The subject of this case is named Alice Longhorn, a dressmaker, aged thirty-two. She had experienced for about eight years irregularities in the menstrual discharge, frequently profuse, and accompanied with violent pains, resembling those of parturition in the hypogastric region. About the nature of her complaint she consulted several medical practitioners, who treated it as a case of *menorrhagia*, and consequently no particular benefit

was derived from their prescriptions. About two years ago she applied for my opinion. After relating the history and symptoms of her case, the probability of there being a tumour in the womb was suggested to her, and she was advised to submit to an examination *per vaginam*. On introducing the finger as far as, and within, the *os uteri*, the extremity of a smooth and solid tumour was perceptible to the touch, and the nature of the case was sufficiently obvious. In order to restrain the hæmorrhages, and mitigate pain, the horizontal position, mineral acids, and opium, were had recourse to; and the patient was advised to wait until the polypus should descend into the *vagina*. For the two years during which I attended her, I have frequently witnessed her labouring under violent and continued pains, so as to deprive her of sleep for several nights in succession; and in a state of *anemia*, owing to excessive hæmorrhages proceeding from the vessels of the *polypus* or of the *uterus*, which frequently rendered it difficult to restore her. Worn out with pain and feebleness, and being unable to follow her occupation, she prevailed upon me to attempt the removal of the tumour, though still confined within the body of the *uterus*. The patient was placed in a hot bath, so as to produce syncope, and a dose of the *Secale cornutum* was administered to her. As soon as she complained of the tumour producing a sensation of pressing down, the dilatation of the *os uteri* was attempted by means of the finger; the attempt, however, was not successful; but, on the contrary, whenever the *os uteri* was irritated by the dilating movement of the finger, it contracted so violently, as to render it impossible to proceed farther.

Some time afterwards, I consulted with Mr. Law, an experienced surgeon residing in Penrith, who advised me to try the effects of the *Secale cornutum* in small and repeated doses, and to endeavour to dilate the *os uteri* for a succession of days. This plan was adopted; but like the former attempt, it proved unsuccessful; for the *os uteri* became irresistably contracted whenever an attempt was made to dilate it.

It suddenly occurred to me that the trial of the *Lobelia inflata* might prove efficacious in overcoming the resisting contraction of the *os uteri*. I gave it to the patient in repeated doses, so as to keep up a slight degree of nausea; and after she had taken it for two successive days, on introducing my finger, I was astonished to discover the *os uteri* so completely dilated as to enable me to introduce with facility two fingers into the cavity of the *uterus*, and to examine the situation and magnitude of the *polypus* with a tolerable degree of exactness.

There was now no difficulty to oppose the introduction of the double *cannula*, which was conveyed along my fore-finger to the base of the polypus; one of the *cannulæ* was then carefully pushed onwards as far as its neck, and maintained in that position until the other *cannula* was directed round the tumour and brought in opposition with the former; the two *cannulæ* were then connected together by means of the rings at the extremity of the rod, and the cord tightened and fastened in the usual manner. The moment the ligature, which encircled the neck of the polypus, was drawn tight, the latter swelled to the size of a child's head, and immediately descended into the vagina.

The patient experienced much pain, which was evidently caused by the expellent action of the uterus; for the tumour appeared altogether insensible, as the constriction of the cord did not seem to produce any painful sensation. During the first four days after the operation, whenever the ligature was tightened, a quantity of greenish coloured fluid, at one time exceeding a pint, escaped from the vagina; and on the fifth day the tumour separated, and was easily brought away. It presented a fleshy appearance, and was surrounded by a flocculent membrane, and measured about eight inches in length, the diameter of its neck being an inch and a quarter; but it was so much softened by the process of decomposition that I could not examine the exact nature of its structure with any degree of accuracy.

No untoward symptom in the course of this period presented itself, nor was there any sanguineous discharge from the uterus. The patient was immediately

put upon a generous diet, with the use of tonics. About ten days after the removal of the tumour, she had her menstrual discharge, which continued for two days in a natural state as to quantity and colour, without experiencing any pain; and, although a month has only elapsed since the operation, she has so far recovered as to be able to take exercise in the open air.—*Edinburgh Med. and Surg. Journ. July*, 1835.

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45. *Large Tumour of the Labium Pudendi—Removed.* By CHARLES CASWALL.—Some time ago, application was made to me by a poor woman, that I would visit her daughter, æt. 22, who was suffering great pain and inconvenience from "a swelling in the left groin." I found, on examination, that the case was somewhat of a different character from what I expected from the mother's description.

Enveloped in a napkin was an enormous fleshy excrescence, (as large as a child's head two or three years old,) suspended by a neck three or four inches long, and as many wide, from the left labium pudendi to between the knees. The tumour was of the warty or cauliflower kind, and had its origin, (as the young woman supposed,) from a bruise she received on the part when she slipped down, about eight years previous. It appeared first as a red pimple, which gradually and slowly increased in size until she became pregnant, (which was about a year and a half before my seeing her.) During pregnancy it grew very rapidly, and at the time she was delivered of her child it was about the same dimensions as I have described above, and the neck sufficiently long to enable the accoucheur to place it over the left thigh, a procedure which prevented any inconvenience arising from it during delivery.

After her accouchement, and nearly up to the period of my first seeing her, she had generally been in the habit of pursuing her avocations, suspending the tumour in the best way she could. Latterly, however she had been accustomed to go out of doors only in the evenings, when she could not be easily recognised, and at such times supporting the burthen, (which was turned up under her dress as high as the umbilicus,) in her hands.

A most disagreeable and offensive exhalation issued from the tumour, and a considerable exudation of slimy mucus-like matter from between its lobulated structure; altogether rendering her existence nearly insupportable. The mother stated that her daughter had been married about twelve months, and her child was nine months old; but I was not able clearly to comprehend if she had led an immoral life or not. I was informed she was not one of the "*unfortunates.*" She had had no particular medical or surgical advice for her case, neither had the tumour been seen for a considerable time by any physician or surgeon. I recommended the removal of it; she immediately consented, and on the second morning afterwards I performed the operation with a scalpel. There was considerable hæmorrhage during the operation, but it was not found necessary to apply more than two ligatures. The edges of the wound were brought together with three sutures and adhesive strapping; it healed by the first intention, and seventeen days after the operation the young woman was employed in her usual occupations.

The internal appearance of the lobes of the tumour is that of medullary sarcoma, with spots here and there, of a hard, fibrous, and gristly character.

The interest of this case is derived from the infrequency of its occurrence, the immense size and length of the tumour, its existence anterior to and during pregnancy and delivery, and the uncertainty whether it derived its origin from venereal infection or not. I have not met with a similar case on record. Elongations of the clitoris and nymphæ are comparatively common, and the generative organs of the male, we know, increase to an enormous magnitude. The mother's declaration would refute the idea that this case was of venereal origin; but that the poor woman was not immaculate is evident, inasmuch as three months after marriage, she gave birth to a child.—*London Med. Gaz. April 18th*, 1835.

46. *On Excision of Diseased Joints.*—Professor Syme has communicated to the Anatomical and Physiological Section of the British Association for the Advancement of Science, (*Fourth Report,*) a memoir, the object of which was to prove by actual demonstration that the two great objections which have been urged against the operation, however specious in theory, are not supported by experience. These objections he stated to be, 1st, that the diseased bone could not be completely removed by excision, so as to afford a perfect and permanent cure; and, 2d, that the limb preserved by the operation must be nearly or altogether useless to the patient. In reply to the first of these objections, he produced a woman, forty-four years of age, who eight years ago had the shoulder-joint removed, on account of caries in the head of the os humeri which had existed for six or seven years, and reduced her to an extreme degree of weakness. The head of the bone, completely hollowed out by disease, was exhibited, and the woman showed that while her general health and strength were quite restored, there was hardly any perceptible difference in the utility of her arms. He also placed before the meeting a boy who had his elbow-joint excised between five and six years ago, on account of caries which had existed twelve months. The articulating extremities of all the bones entering into the formation of the joint were exhibited; and the boy proved, by free and varied movements of his arm, that he retained completely the power of flexion, extension, and rotation of the elbow, without any diminution of strength. In reply to the second objection, he stated that it seemed to be grounded on the difficulty of conceiving how the tendons, after being cut away from their attachments, could again adhere to the bones so as to move them in obedience to the action of the muscles, and on the erroneous idea which generally existed as to the changes that occur between the osseous surfaces subsequently to the operation. In order to show that when tendons have their attachments divided they readily acquire new ones, so as to perform their usual offices, he brought forward a patient who had suffered Chopart's amputation of the foot for caries of the tarsus and metatarsus, and who consequently, having only the os calcis and astragalus remaining, had had all the tendons opposing the extensors of the ankle divided, but who nevertheless retained completely the power of bending and extending the joint. In respect to the changes which take place between the osseous surfaces after the operation of excision, he stated that anchylosis could not be induced unless the limb was kept perfectly motionless; and that the bones almost invariably became united, not by any structure analogous to a joint, but by means of a fibrous substance possessing such thickness, strength, and flexibility as to preserve the shape and firmness of the limb, and allow a proper degree of motion in the seat of the joint. A specimen of this structure was exhibited in the case of an elbow-joint which had been dissected about twelve months after the performance of excision. Having made these remarks, he submitted to the meeting the positive evidence afforded by several persons in addition to those already exhibited, in all of whom the operation of excision had preserved limbs hardly, if at all, less useful than they were before suffering from the disease.

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47. *Hydrocephalus unsuccessfully Treated by Tapping.*—Francis Cooper, Esq. has recorded in the *Lancet*, (June 27th, 1835,) an example of this. The disease was congenital. At birth the circular measurement of the child's head was seventeen inches, and the occipito-frontal twelve inches. All the bones of the head were disunited, and the fontenelle much distended. The operation was first performed at the end of the second month, at which time the circular measurement had increased to twenty-three inches, and the vertical to twenty-one inches. A puncture was made with a lancet a little to the left of the great longitudinal sinus and just above the occiput. Twenty-eight ounces of water flowed from the wound, and a considerable quantity continued to ooze from it for two or three days after the wound closed. For some days after the operation, except the two or three immediately following, the child seemed better; but

after the lapse of a fortnight the head was as large as ever. Tapping was again tried, but without relief, and after this last attempt, the child gradually sank, and in a week died.

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48. *Ligature of the Brachial Artery at the Bend of the Elbow.*—Professor Graefe, is of opinion that the method of Hunter, however advantageous in general, ought occasionally to be deviated from. He has cited an instance in which the brachial artery had been wounded in bleeding. He did not see the patient till three days after the accident, at which time the arm was swollen, tense, of a livid red, and very painful when pressed. In this case the tumefaction of the member would have presented an insurmountable obstacle to the ligature of the artery at the usual place—the internal margin of the biceps. M. Graëfe therefore preferred operating at the bend of the arm, because there the jet of blood would serve as a guide to the artery, which was accordingly tied above and below the wound in its coats. The patient was dismissed cured at the end of a month.—*Gaz. Med.*

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49. *New Caustic for the Treatment of Cancerous Diseases.*—This new therapeutic agent proposed by M. Recamier, and which he is now employing with advantage in several cases at the Hôtel-Dieu, consists of a solution of chloride of gold in aqua regia. It is prepared as follows:—℞. Acid. nit. muriat. ℥j.; Chlorur. auri. pur. gr. vj. solv. It is employed in the same manner as other liquid caustics. A piece of lint is dipped in the solution, and the diseased surface cauterized with it. The cauterization ought to be deep, and form a eschar, which is detached in three or four days. After it has fallen off, the cauterization must be repeated, and for six or eight times, according to the extent of the ulcerated surface and the depth of the lesion. The action of the caustic is not painful; its action is entirely local, and in both these respects it offers incontestable advantages.—*Lancette Française, June 9th,* 1835.

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50. *Prolapsus Ani Cured by Nux Vomica.*—Dr. Schwartz, in an article in a late number of *Hufeland's Journal,* asserts that the nux vomica is a specific remedy for prolapsus ani. When the disease occurs in very young children, he administers a solution of one or two grains of the extract in two drachms of distilled water, and gives six or ten drops every four hours. The disease is generally cured, he asserts, on the following day. When the child is older, he gives fifteen drops, and continues the medicine eight days after the cure, to prevent a relapse. Children at the breast require very small doses, two or three drops of the solution. When the prolapsus has existed for some time, he adds a few grains of the extract of rhatany as an astringent.

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51. *Fracture of Clavicle.*—Mr. Syme has recorded in the *Edinburgh Medical and Surgical Journal* for July last, a case of this accident, in which the position of the broken surfaces of the bone were completely reversed from the usual one, viz. the acromial extremity was elevated above the sternal one, requiring no inconsiderable force to urge them to the same level; and even when the cure was completed, the sternal extremity lay rather below its fellow.

MIDWIFERY.

52. *Cæsarean Operation.*—Dr. Reuter has communicated to the *Heidelberger Klinische Annalen,* (Vol. X. No. 3,) some observations on the Cæsarean operation in a living female compared with the same operation in a woman who died suddenly at the full period of gestation. The woman who was the subject of the first case, and who was operated on in consequence of malformation resulting from rickets, lived but eight days, when she died of metro-peritonitis. The

infant was extracted alive. The second operation was performed on a woman who had died; the child was also dead.

These two cases present nothing interesting, except the following comparative results. Whatever may be the difficulty of ascertaining the indications for the Cæsarean operation on a living woman, this difficulty is much greater when the operation is to be performed on one who has died suddenly. In this last case the indications depend upon the certainty we can arrive at, of the life of the infant and the death of the mother; but certainly as regards this last, cannot be attained within the period during which it is necessary to perform the operation, in order to save the child; unless, indeed, the life of the mother has been destroyed by some evident external cause. The extreme limits of the period alluded to, is three hours after the apparent death of the mother. As respects the certainty of the life of the infant in a woman who has died suddenly, there are greater difficulties at arriving at it, than in a living woman, who may by her sensations furnish us some indications; moreover, the infant participates more or less in the disease which precedes the sudden death of the mother; its movements are more feeble, and less sensible in consequence of the want of reäction in the uterus. The operation also offers in the second more difficulties than in the first. In fact, in a woman who has suddenly died, or who is in a state of apparent death, the blood stagnant in the vessels, escapes with more facility, and gives rise to considerable effusions, a circumstance which, with the state of inertia and flaccidity of the uterus, renders the hand of the operator less certain, and becomes in case of apparent death, one of the most unfortunate complications. In the living woman, on the contrary, the uterus is firmer, and arrests hæmorrhage by its contractions, better than any hemostatic, and hæmorrhage is also less to be feared, because the veins are less distended.

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53. *Report of Cases in the Lying-in Wards of La Charité, Berlin, in* 1832.—There were in these wards on the 1st January, 1832, remaining from the previous year, 22; delivered in hospital in 1832, 249; delivered outside, 11; making, 282. The number of children born was 252, 135 boys and 117 girls,* or as 1.16 to 1. The first position of the head was observed in 183 presentations, the first position of the breech in three, and the transverse position in five. In all except a very few cases, the placenta came away within from five to twenty minutes after the child's birth. In 220 cases, labour was completed without any assistance, except the support given to the perineum; in 24 the forceps was applied, and in five cases version; hence the proportion of natural to artificial labours was 220 to 29; nearly as 7.6 to 1.

The diseases and accidents which complicated the patients' state after delivery were very numerous; thus we find 24 cases of uterine hæmorrhage; 11 of metritis; 10 of puerperal fever; 2 of puerperal mania; 51 of various febrile affections; inversion of the uterus 1; putridity 1; mastitis 12; rupture of the perineum 5.

The frequency of inflammatory and febrile affections after delivery depended upon an epidemic constitution; and metritis was generally the result of artificial labour. Puerperal fever occurred under such different circumstances and times, that it was impossible to refer it to any epidemic cause.

The following were the most remarkable affections of the new-born children. Asphyxia 15; icterus 30; induration of the cellular tissue 13; inflammation of the eyes 37; aphthæ 22; convulsions 5; pneumonia 3; eclampsia 3. Twenty-three children were born dead, and 30 died during the convalescence of the mother, viz. convulsions 5; eclampsia 3; apoplexy 1; pneumonia 3; induration of cellular tissue 9; atrophy 7.

On comparing the several numbers of births, deaths, diseases, &c. we obtain the following proportions. Births, to number of deaths and children born dead, 252: 53 = 4.8 = 1; births to children born dead, 252: 23, or 10.95: 1; births to deaths soon after birth 252: 30, or 8.4; 1.—*Rust's Magazin. No. II. for* 1835.

* From a comparison made in France of more than fifteen millions of births, it would appear that the proportion of males born to females is as 17 to 16.

MEDICAL JURISPRUDENCE.

54. *Accidental poisoning of three negroes by Cantharides.*—The following interesting account of the accidental poisoning of three negroes by cantharides, has been communicated to the *Jamaica Physical Journal*, for May, 1835, by JAMES MAXWELL, Esq. Surgeon to the Annotto Bay Marine Hospital.

"Three healthy robust negro men, on Fort Stewart Estate, had a bottle of rum brought to them by a young man who stole it from the overseer's house; in which six drachms of finely powdered cantharides had been macerated eight hours previously, to apply to the ring-bone of a horse. The person who stole it tasted it, but not relishing the draught, carried it to his friends, and informed them that he had found a bottle of bitters, which the white people occasionally used, and as he was not fond of bitters, they might share it amongst them. This happened about 8 P. M. in fine moonlight, and it was divided as equally as possible, by each person putting the bottle to his head, and taking what he considered to be his share. R. Pollock had eaten a hearty supper before he partook of it; the other two drank it upon empty stomachs, and ate their supper immediately afterwards. Shortly after they complained of sharp lancinating pain of stomach, burning sensation of the throat, with great nausea, which increased, and in a couple of hours they were seized with violent retching; the contents of their stomachs were mixed with blood, mucus, and froth.

"The kernels of six antidotes (*Feuiella Cordifolia*) were boiled in a pint of water, and given to each by the black dispenser, which acted as an emetic.

"17*th*. I saw them early next morning. They are all complaining of excruciating burning pain in the region of the stomach; surface covered with cold clammy sweat, sense of constant burning of the throat, most intense at the top of the œsophagus, and descending along that passage to the stomach. There is great difficulty in swallowing, and to use the significant expression of one of them, his throat is on fire. There is great depression of the vital powers*—they are incessantly moaning, and consider death to be inevitable; pulse accelerated about twenty beats in a minute, and rather weak. The breathing is not difficult, nor do they complain of any irritation of the urinary organs; no pain or tension of the abdomen: the bowels have not acted since they took the poison. The vomiting recurs at intervals, and they eject frothy mucus in great quantity tinged with a vermilion colour. They are regularly salivated, spitting incessantly a mixture of mucus and saliva of a pink colour. The throat of each was examined, and found to be swollen: had an erysipelatous blush of inflammation with turgid veins running across the fauces. To be perfectly satisfied that every particle of the powder was removed, I administered twenty grains of the sulp. of zinc to each, which acted instantaneously; they drank copiously of warm water, and after their stomachs were settled, three ounces of fine olive oil was given to each, which they retained. Enemata of the infusion of ochro, (*Hibiscus esculentus,*) with castor oil, ordered to be exhibited frequently, and the infusion to be drank ad libitum.

"The contents of the bottle were kept for my inspection; I had the dregs strained through blotting paper, dried in the sun, and ascertained that they had swallowed three drachms of the powder, and the whole of the rum, in which the cantharides had been macerated.

"1 P. M. They have had no recurrence of vomiting. One of them has had a copious alvine dejection, unmixed with blood. The symptoms continue the same as in the morning, with the exception of the stomach, which is less irritable. Two ounces of fine castor oil prescribed for each.

* "Cantharides in powder, taken into the stomach, acted as a corrosive, producing vomiting, the discharge of much bloody mucus, depression of the vital power, and death.
"The stomach is always violently inflamed, and the bladder sometimes."—*Orfila, Traite de Poisons.*

"Evening visit.—The oil has operated on all; no blood has been passed by stool; they spit mucus and saliva tinged with blood incessantly. They complain of unremitting acute burning pain of stomach, with great difficulty of swallowing; thirst not urgent. Pulse of Pollock and Buchanan, 100. Mackintosh 80; no strangury. Blooded to eighteen ounces. Applic. emplast. lyttæ. regioni gastrici. The enemata were directed to be given occasionally, and the ochro tea to be used as common drink.

"18*th*. R. Pollock's blood exhibited no buffy coat; oil operated freely, and since the emetic, has had no irritation of stomach. There is neither blood in his stools nor urine, but he now complains of severe strangury, and the urine comes away in small quantities. The gastric symptoms are not so urgent; throat still painfully affected, inflamed and covered with coagulable lymph. He is constantly spitting a frothy matter mixed with blood; great thirst; no heat of skin; pulse 104, regular and full; tongue highly furred with red edges. There is no fœtid smell of the breath; the gums are red and swollen, and he states the pain to be most severe at the top of the œsophagus, diminishing as it descends to the stomach.

"George Buchanan.—Pain in the region of the stomach abated; throat very painful, with tumefaction of the tonsils, and relaxation of the uvula; the palate is suffused with a slight vermilion blush, deepest towards the fauces. The irritation of the bladder not so great as in Pollock; pulse 108, full; tongue furred and red at the edges; great difficulty of swallowing, with occasional eructations of sour frothy mucus, tinged red.

"R. Mackintosh.—Gastric pain moderated; throat very painful, with difficulty of swallowing; tonsils swollen; uvula lengthened as in cases of catarrh; foul tongue with red edges; pulse 104; no fever; strangury very troublesome; continues to spit constantly, with an occasional eructation of frothy mucus, which he says is as sour as 'lime-juice.' The oil was repeated—fomentations to the region of the bladder, with opiate, glysters, and warm bath.

"19*th*. Pollock.—Pain of stomach much relieved; throat swollen, and on the back part of the fauces there is an apthous ulcer the size of a sixpence, covered with a whitish adherent crust, another of the same description on the side of the right tonsil. Sublingual glands slightly inflamed and tumefied; gums red, with a copious secretion of saliva, which causes his mouth to stream as if he was under a course of mercury. Pulse 98, soft and full; strangury excessively severe; he passes his urine guttatim, and to use his own expression, it burns him 'like a pepper.'

"Mackintosh.—Describes the pain of stomach to be rather severe to-day; pulse 120, with thirst; no febrile heat; gums and inside of the mouth inflamed and ulcerated, and he says that he feels exactly the same as he did when lately salivated with mercury, only has no coppery taste in his mouth; throat still inflamed; difficulty of swallowing great; strangury troublesome.

"Buchanan.—Feels better; throat still inflamed; pulse 100; completely salivated with ulcerated gums; strangury much alleviated.

"20*th*. There is an amelioration of all the symptoms: the strangury has left Buchanan; the other two are still slightly affected with it; the salivation continues in all.

"21*st*. They are improving.

"24*th*. Strangury gone; salivation abating; throat and mouth getting better. From this time they gradually recovered, and in two weeks were perfectly well.

"The recovery of these persons from the effects of an highly corrosive substance, may be considered a fortunate circumstance, and in a great measure may be attributed to the speedy ejectment of the poison from the stomach. Not less than a drachm of cantharides, mixed with about six ounces of rum, could have been taken by each of them, but as they filled their stomachs with their favourite supper meal, its effects were not so immediately palpable as it other-

wise would have been. They admitted that the stolen liquor had rather a nauseous taste, but as it was given to them as bitters used by the white people, they shared the prize, and soon afterwards began to suspect that they had been imposed upon. The pain increased rapidly, but conscious of their guilt, they were afraid to call for assistance till they could no longer conceal it, but so soon as severe vomiting commenced, they suspected that they had drank a poisonous liquid, became alarmed, and told the truth.

"The antidote, a favourite remedy amongst negroes for all such accidents, was administered, and its over-dose acted as a powerful emetic, relieving the stomach of its entire contents. Not satisfied with what had been done previous to my arrival, I immediately gave an emetic to ensure the complete ejectment of the poison, and directed large quantities of the bland mucilaginous infusion of ochro, to be liberally used, with oil to sheath the coats of the stomach from the escharotic effects of the cantharides.

"Magendie has warned us against exciting the activity of the absorbents by venesection, in cases of poisoning, and following the recommendation of that distinguished physiologist, I abstained from abstracting blood, till I had reason to think that the powdered cantharides was effectually removed by vomiting and purging. It was not till towards night, when the gastric symptoms assumed an alarming aspect, and threatened active inflammation, that I had recourse to the usual efficient means of subduing it. The throat was early affected with inflammation, and the red excoriated state of the tongue may have been occasioned by a few particles of the powder having lodged there.

"It is a singular circumstance, that previous to venesection, not one of them had the least irritation of the urinary organs; but very soon afterwards they were seized with a very severe form of spasmodic strangury, attended by severe scalding, long before it could be presumed that the blisters could effect such a result.

"It is well-known to those conversant with negroes, how partial they are to blisters; for the most trifling ailments, and how little susceptible they are of strangury; for in ninety-nine cases out of an hundred, that highly painful affection is unknown amongst them from the absorption of blister-flies. It is reasonable, therefore, to infer, that the application of the blisters had little, if any share in exciting the vesical irritation, but that the agency of the absorbents was increased by lessening the circulating fluids, so as to produce the phenomena in question.

"I may here remark, how fallacious are all those agents, so confidently recommended for alleviating the excruciating sufferings from strangury. I never found camphor, either sprinkled on the blister, or given in large doses, of the least utility. The only remedies which offer any positive relief in severe cases of strangury, are anodyne glysters, flannel wrung out in hot water, to which laudanum has been added and applied over the pubis, with the administration of an opiate, where circumstances will admit."

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55. *Poisoning by Sausages.*—It appears that cases of poisoning by bad sausages and puddings are pretty frequent in certain districts of Wertemberg, in the neighbourhood of the Black Forest. In the Heidelberg Chemical Annals there is a great number of such cases related by Dr. Bodenmüller, who observed them in the winter and spring of 1834. The symptoms were most alarming, and several individuals died; the puddings they had eaten was chiefly composed of liver, and had become sour. The sausages that had caused poisoning were clotted and reduced to a kind of pap in the centre, were exceedingly bitter and rancid in taste, and cheesy in smell. Vomiting should be immediately induced, or if already effected, a purgative draught of Glauber's salt, and clysters of vinegar and soap should be had recourse to.—*Ryan's Lond. Med. and Surg. Journ. January 31st*, 1835.

CHEMISTRY.

56. *Picamare and Pittacalle.*—M. Reichenbach has succeeded in separating the substance that gives bitterness to the products of the empyreumatic distillation of organic bodies, and has bestowed the appellation *picamare (in pice amarum)* upon it. This matter has the consistence of a somewhat thick oil, is fatty to the touch, colourless, limpid, and transparent; its odour is weak and not disagreeable; its taste is at first of a burning, intolerable bitterness; then cool like that of peppermint. This coolness remains a long time after the bitterness has passed off. We will not enter into all the details given by M. Reichenbach as to its physical and chemical qualities and its preparation, as it has not yet been tried as a therapeutic agent. Mr. R. thinks that it is very likely a powerful remedy. He is also of opinion that from its slight volatility, its tolerable consistence, and its feeble affinity for oxygen, it is a principle of fatty bodies extracted from tar, which, after *paroffine*, promises the greatest capability of application to the arts. It might, perhaps, be used to oil delicate machines, and preserve steel-manufactured articles from rust, being in this a substitute for the brown paper prepared from old tarred ropes.

If to a solution of impure picamare in fifty parts of alcohol, or of tar-oil freed from its free acid by liquid potassa, a few drops of barytes water be added, the liquid immediately becomes of a beautiful blue colour, which passes to an indigo blue in the course of a few minutes. This is owing to the presence of a new blue substance, to which M. Reichenbach has given the name of *pittacalle* (ex πιττα pitch, and καλλευ beautiful.) This matter in a mass strongly resembles indigo in appearance. M. R. has investigated it most minutely in its physical and chemical properties, and has no doubt that the discovery is important as regards the art of dying, and that pittacalle may be used as advantageously as indigo.—*Journal de Pharmacie, June*, 1834.

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57. *Analysis of Milky Blood.* By Le Canu.—The French Lancet, for 23d April last, contains the following analysis of some milky blood drawn from the arm of a person, who, after a party of pleasure was attacked with a general malaise and sense of great suffocation, accompanied with vomiting of blood.

Water - - - - - -		794.0
Albumen - - - - - -		64.0
Fatty matters, Savon acid, Cholesterine	108	
Oleine - - - - - -		117
Margarine, Stearine,		
Salts and extractive matters - - -		25
Traces of colouring matter,		
-		1000

In this blood then, the water and albumen were in nearly the same proportions as in healthy blood; whilst on the contrary the fibrine and especially the colouring matter had almost entirely disappeared. The globules were replaced by a corresponding amount of fatter matters, among which the savon acid and the cholesterine exists in healthy blood; whilst the oleine, the margarine, and the stearine do not exist or at least have never been detected. The remarkable appearance of the blood in this case, evidently arose from the presence in a large proportion of fatty matters, held in suspension in the aqueous fluid by assistance of the albumen.

This condition of the blood has been noticed by Caventou, (Journ. de Phys. xiv. 627,) and by Raspail, (Chimie Organique, p. 381.)

58. *New Organic Principle.*—Dr. REICHENBACH, in continuing his researches into the products of the distillation of organic bodies, has separated a new oily substance, which is very distinct from the eupione, creosote, &c. This substance is extracted with great difficulty; the author calls it *capnomore*, because it is particularly found in the smoke of organic bodies destroyed by fire. In its pure state the capnomore is a transparent colourless fluid, with an agreeable odour resembling rum-punch; it is of the specific gravity of 0.9775, at 20°; it boils at 185°, and does not freeze even at 21°. It evaporates without leaving any residue, and is not a conductor of electricity. It acts as an acid with the vegetable bases, and as a base with sulphuric acid and the salts. The substance is distinguished from the creosote and picamare by its taste, its insolubility in alkalies and acetic acid, and the facility with which it dissolves gum-elastic. It differs from eupione by its specific gravity, boiling point, &c. The capnomore is found in soot, particularly that derived from the beach-tree, and in the animal oil of Dippel.—*Journal de Chim. Med., No.* 4, 1835.

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59. *Analysis of Iodide of Iron.*—According to a recent analysis by Mr. J. D. SMITH, given in the *London and Edinburgh Philos. Mag.* for August last, the iodide of iron is composed of—

1 equivalent of	iodine	- - - - - - - -	126
1 "	iron	- - - - - - - -	28
5 "	water	- - - - - - - -	45
			199

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MISCELLANEOUS.

60. *Effects of the Atmosphere on high Mountains.*—M. BOUSSINGAULT has communicated to the Royal Academy of Sciences a memoir on this subject. M. B. in company with Dr. Hall, has reached on Chimborazo the elevation of 6.006 meters, the highest elevation yet reached on mountains. The barometers descended to 13 p. 8 lines. The temperature of the air in the shade was 7.080.

M. B. thinks it possible to become acclimated to rarefied air. Thus at a height almost equal to that of Mont Blanc, where the celebrated Saussure scarcely had strength to consult his instruments, young American women dance whole nights. A celebrated battle in the war of independence, that of Pichincha, was fought at a height nearly equal to that of Mont Rose. The guides who accompanied de Saussure on Mont Blanc asserted, that they had seen the stars in clear daylight. M. Boussingault, who has attained a greater height, has never observed that phenomena.—*Archives Gen. December*, 1834.

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61. *Importance of Ventilation.*—An abstract of a registry kept in the Lying-in Hospital of Great Britain street, Dublin, from the year 1758 to the end of 1833, by the late Dr. Joseph Clarke of Dublin, was communicated to the Anatomical and Physiological Section of the British Association for the Advancement of Science, which illustrates in a very striking manner the importance of thorough ventilation, and the great diminution of mortality among the children in this hospital since that object has been attended to. It appears that during the seventy-five years mentioned, relief has been afforded to upwards of 129,000 poor women; that in 1781 every sixth child died within nine days after birth, of convulsive disease; and that after means of thorough ventilation had been adopted, the mortality of infants, in five successive years, was reduced to nearly one in twenty.

AMERICAN INTELLIGENCE.

Notice of a Case of Urinary Calculus, in which Dr. J. Randolph successfully performed Lithotripsy. By I. Hays, M. D.—Our number for November last, contains an account by our friend Dr. Randolph, of six cases of stone in the bladder, in all of which he successfully performed the operation of lithotripsy. Dr. Randolph informs us that since furnishing us with that communication, he has performed the same operation in six other cases, and in all with entire success.

Having been politely invited by Dr. R. to assist him in his operations upon the last of these cases, it has afforded us an opportunity of collecting some notes in relation to it, which, with the operator's permission, we lay before our readers.

The subject of this case is one of our most respectable merchants, aged fifty-seven years, who dates the commencement of his complaint as far back as 1816; but it is only during the nine last years that he has had *marked* symptoms of urinary calculus. For two years his sufferings have been extreme, from spasms of the bladder, sometimes followed by profuse discharges of blood through the urethra, and from frequent and uncontrollable desire to urinate. He is often obliged to pass his urine every ten minutes, and the urgency of this call is so great that he is frequently compelled to satisfy it before he can open his dress, and he habitually wears a thick cloth to protect his clothes. His complexion and countenance are bad; and he has the appearance of one worn down by long and severe sufferings.

I saw this gentleman for the first time on the 28th of September, 1835. Dr. Randolph had previously sounded him, detected a calculus in the bladder, and had also ascertained by the introduction of bougies that the urethra was of sufficient size to admit Jacobson's *brise pierre*. The patient was not in a favourable condition for an operation, having had a chill the preceding night, and his bladder being so irritable that he was compelled to empty it a short time previous to our visit. Dr. Randolph however introduced Jacobson's instrument more particularly with a view of exploring the bladder, to ascertain its condition and the size of the stone, than with an expectation of being able to proceed further with the operation; but the stone being readily caught and the patient suffering less than was anticipated, the calculus was twice caught and readily crushed, before the instrument was withdrawn. It was not thought adviseable to do more at this time, in the existing condition of the patient.

I again visited this patient on the 1st of October. He had passed since the operation, a considerable number of fragments of the calculus. These consisted of small granules cemented together, and presenting the appearance of a mulberry calculus. The patient thinks himself benefited by the operation. Dr. R. introduced Jacobson's instrument; this part of the operation occupied but five seconds; in five seconds more a calculus was seized. The stone was caught and crushed four times, the instrument freed from the adhering fragments and withdrawn, and the whole operation completed in a few seconds less than five minutes.

The patient was seen by me for the third time on the 15th of October. His general appearance was much improved, and he expressed himself as greatly relieved. He had passed a number of fragments since the last operation, and now thinks that there is one remaining too large to pass the urethra, as he states that he feels it occasionally entering the neck of the bladder, which causes him pain. Dr. R. introduced Jacobson's instrument, caught several times some fragments and crushed them.

At the request of Dr. Randolph, I this day, (Oct. 25th,) sounded the patient and could not detect any fragments in the bladder. The exploration did not

occasion the patient any pain. The appearance of the patient is now greatly improved, his complexion and countenance are good, his spirits excellent. He says that he is entirely well, can retain his urine four or five hours, and walk as actively as any one. It will be perceived that this case was completed by three operations, and in the short period of but little more than two weeks. From the quantity of fragments collected, we should suppose the stone was of the size of a small walnut.

We questioned this patient after each operation and again to-day respecting the pain he suffered from them. His answers have always been the same, that the pain "from the operation was nothing compared to what he often suffered from the spasms of the bladder." Indeed he never uttered a groan, or desired that the operation might be desisted from. He now says that the principal pain he experienced, was "during the working with the instrument," that as soon as this was stopped or the instrument withdrawn, all pain ceased, leaving only a slight smarting or soreness at the end of the penis. After each operation he experienced marked relief. We were particular in our inquiries respecting the pain suffered from the operation, and have stated the answers as we received them, nearly in the words of the patient, because, much difference of opinion exists on this point. It is one, however, not readily settled, inasmuch as we have no positive measure of pain, and moreover, its degree must vary in each case, according to the condition of the bladder, the sensibility of the patient to pain, and finally, it must depend in no small measure upon the kind of instrument employed and the skill of the operator. We must not conclude these imperfect notes without expressing the admiration we experienced at the neatness and skill displayed by Dr. R. in his manipulation, upon which in no small measure must depend his great success.

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On the Use of the Pareira Brava in Irritable Bladder. By Thomas F. Betton, M. D. of Germantown. [In a note to the Editor.]

Dear Sir—I am induced to ask you to give public mention of the use of a remedy, now much neglected, and which, as far as I can ascertain, has never been used in this country; namely, the Pareira brava.

From the high character given to it by Brodie, I was led lately to try its efficacy in a case of irritable bladder, which had resisted the usual means of treatment. It was used in the proportion of one ounce of the root to a quart of water, gently boiled down to one-half, of which a wine-glassful was taken three times a day. In about four weeks the patient was perfectly cured, and has continued so since.

According to the Dict. Univ. de Mat. Med. it was introduced into Europe, in 1688; and was much extolled by Helvetius as a lithontriptic. It is called *Cissampelos pareira*, and by the Spaniards, *Pareira brava*. It has been celebrated in former days as so powerful a lithontriptic, as to render useless lithotomy, and was so much esteemed by the Brazilians, as to be named by them the Universal Medicine. Its use in Europe seems to have declined, and Brodie, I think very justly, laments that such should be the case.

If in the next number of the journal, you would give a short notice of the article, that others may be induced also to try it, and thus confirm or disprove my observations, which indeed should scarcely be drawn from a single case, and but for the authority of Mr. Brodie, would not have been, it would gratify me.

Germantown, May 1st, 1835.

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Case of Pleurosthotonos, or Tetanus Lateralis. By William G. Smith, of Port au Prince.—I was called on 20th of July, 1834, to visit a boy, named Zizi, who was reported to have always enjoyed good health until the evening before, when he fell sick, and has since become gradually "bent on one side." His parents being ignorant, attributed this state of things to *des ouangats*, (obiah,) and thought it the work of some of their enemies. I went immediately to the house,

where I learnt he was the son of an inferior officer in the Haytien service Patient fifteen years old, strong and robust; muscular system well developed skin dry, except about the face and neck, as far down as the superior region of the chest, it was so much so, that I asked whether any fluid had been thrown on that part of his body. I was assured to the contrary, but at the same time, that he had been in that state since the night before. Several questions were put to the patient respecting his complaint and sensations, to all of which he replied rationally, but very slowly, with a kind of impediment, and as if suffering from acute pains. The details given me by his parents were, that he had always been a very active boy, and from birth enjoyed good health. That he had been latterly in the habit of aiding his mother on market days; the day before I had been called, he was quite well, and as usual, had carried on his head to and from the market, several baskets charged with fruit, vegetables, &c. Having remained in the market nearly the whole day, under a hot sun, he returned home about 4 o'clock, P. M. much heated and perspiring profusely; threw off his shoes, which he had not been in the habit of wearing constantly, and after having walked barefoot on the marble, or brick pavements of his chamber, for about a quarter of an hour, he suddenly complained of a sensation of chilliness, alternated with lancinating heat in his back, and the inferior parts of the abdomen He was put to bed, received warm teas of various herbs, and some stimulating domestic remedies were applied to the surface of his body. In about nine hours after this sensation of chilliness, &c. there were succeeded to it a heaviness of the head, with a pricking, uneasy sensation, (not pain,) felt in all the limbs, particularly the legs and neck; the body assumed a singular lateral inclination, so that the patient was asked frequently why he laid in that posture, and his mother attempted once or twice, to place him in a different position. When I saw Zizi, he was lying in a manner not easily described, but partly on his back, and partly on his right side, the trunk of the body as if pushed out on the opposite or left side; the body presented one of the most curious morbid phenomenon imaginable, and as near as I am capable of comparing, it represented the figure 9. His friends said that about midnight, they perceived that his mouth watered, and he had occasionally attacks of crise, (spasms.) On close examination of patient, I found the skin hot and dry, except about the face and neck, as far down as above described; deglutition embarrassed; countenance pinched, expressing distress and suffering; pulse full, but not uncommonly rapid; heavy sensation of the tongue, which otherwise was little changed from what it might be in ordinary health; discharge of saliva from the mouth as if from mercurial agency; tightness experienced about the chest; pain at the extremity of the sternum shooting into the back; motion of body in general difficult and painful, every attempt to a change of position increased the muscular twitchings, or spasms with his suffering; neck and spine not as much affected as I had been accustomed to see it in the more common variety of tetanus. Abdomen tense and retracted; costiveness; muscles of abdomen and convex, or left side affected with spasms; body and lower extremity rigid and flexed towards the right side. The disease continuing to advance in spite of the most active means employed, the muscles of the neck and jaws at length became rigid; the organs of voluntary motion gradually ceased; the eyes became fixed, glassy and staring; countenance altered; strength exhausted; pulse irregular, at one moment full, quick, small, intermittent, and at last death closed the scene, at 8 o'clock in the evening, the disease having terminated its terrible career in about forty-four hours from its first development.

This case of tetanus is deemed worth relating; 1st, on account of its particular variety, pleurosthotonos or tetanus lateralis being of rare occurrence, so much so, as to have had its very existence suspected by Dr. Gregory, and other eminent authorities; 2d, the vague symptoms, with regard to the pulse, &c. from beginning to the end of the disease; 3d, the chilliness alternated by lancinating heat, &c.; 4th, local sweating, the increased secretion from the mouth, and the immediate or exciting cause of the disease.

Statement of Deaths, with the Diseases and Ages, in the City and Liberties of Philadelphia, during the year 1834.

DISEASES.	Males.	Females.	Boys.	Girls.	Under 1 Year.	1 to 2	2 to 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100 to 110	Total.
Apoplexy	46	30	0	2	0	1	0	0	0	1	9	10	14	12	19	8	2	0	0	76
Abscess	7	5	5	2	3	1	1	0	1	1	0	2	1	1	0	0	1	0	0	12
Aneurism of Heart and Aorta	1	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	3
Carotid Artery	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Asphyxia	5	3	5	2	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8
Asthma	6	4	0	1	0	0	1	0	0	0	0	0	4	1	2	2	0	0	0	10
Atrophy	57	39	54	32	48	24	10	4	0	0	1	3	2	0	3	1	0	0	0	96
Angina Pectoris	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Amenorrhœa	0	1	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
Bronchitis	69	52	59	43	56	21	16	8	0	1	1	0	2	2	5	5	3	1	0	121
Burns	9	18	9	13	2	4	6	4	4	2	1	1	3	0	0	0	0	0	0	27
Consumption	322	314	41	61	23	20	14	8	3	34	190	143	90	53	34	18	5	1	0	636
Croup	47	34	47	32	32	16	22	9	0	0	0	0	2	0	0	0	0	0	0	81
Cramp of the Stomach	2	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Convulsions	157	120	143	114	200	23	25	4	2	3	4	10	3	3	0	0	0	0	0	277
Puerperal	0	3	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	3
Cancer	9	26	2	1	0	0	0	1	0	1	2	5	8	9	5	3	0	0	0	35
Cachexia	2	3	0	0	0	0	0	0	0	0	0	0	0	1	3	0	1	0	0	5
Caries of the Spine	2	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Congestion	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
of the Brain	19	18	7	8	10	1	1	1	1	1	5	7	6	2	1	1	0	0	0	37
Lungs	6	2	3	0	2	1	0	0	0	0	3	0	1	0	0	1	0	0	0	8
Child-bed	0	5	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	5
Casualties	21	3	7	0	1	0	3	1	1	1	3	7	3	1	2	1	0	0	0	24
Concussion of the Brain	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Spine	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Colic	3	2	1	1	2	0	0	0	0	0	2	0	0	0	0	1	0	0	0	5
Chorea	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Compression of the Brain	1	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Cholera	100	51	7	5	0	1	4	3	2	2	28	31	37	26	14	2	1	0	0	181
Morbus	40	13	6	1	1	0	1	2	1	2	13	11	12	4	2	2	2	0	0	53
Infantum	206	171	206	171	248	101	23	5	0	0	0	0	0	0	0	0	0	0	0	377
Dropsy	44	59	16	12	4	2	7	7	1	7	7	18	12	13	12	12	1	0	0	103
of the Brain	100	98	99	97	80	59	35	16	5	0	1	1	0	0	0	0	0	0	0	198
Breast	26	25	4	8	2	1	4	2	2	1	8	9	4	8	6	4	0	0	0	81
Pericardium	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Debility and Decay	109	98	80	58	127	5	5	0	0	1	3	7	8	8	15	18	7	2	1	207
Disease of the Brain	14	13	10	8	6	3	3	3	2	1	3	1	2	2	1	0	0	0	0	27
Throat	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Chest	2	3	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	1	0	5
Lungs	3	1	2	1	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
Heart	15	14	1	2	2	0	0	0	0	1	0	4	3	1	6	2	5	0	0	29
Stomach	2	4	0	0	0	0	0	0	0	0	1	1	1	0	2	1	0	0	0	6
Liver	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Kidney	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
Bowels	2	3	2	2	2	0	2	0	0	0	1	0	0	0	0	0	0	0	0	5
Spine	1	4	0	3	2	0	0	0	0	1	0	1	0	0	0	0	1	0	0	5
Hip	3	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4
Knee Joint	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Uterus	0	5	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	5
Bladder	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
Glands	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Rectum	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Drowned	53	7	17	1	0	2	2	6	7	3	14	13	12	2	1	0	0	0	0	60
Dentery	42	28	22	13	13	9	5	5	3	0	6	6	6	5	8	3	1	0	0	70
Diarrhœa	60	63	33	40	41	17	5	6	2	2	4	15	7	5	8	6	4	0	1	123
Drinking Cold Water	4	0	1	0	0	0	0	0	0	1	0	0	2	0	1	0	0	0	0	4
Diabetes	2	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
Dyspepsy	5	7	3	5	2	1	1	0	2	1	1	2	1	0	1	0	0	0	0	12
Dyspepsia	10	10	5	2	5	2	0	0	0	0	2	3	2	2	2	2	0	0	0	20
Enlargement of the Heart	6	2	3	0	2	0	0	0	0	0	2	1	0	1	0	1	0	0	0	8
Breasts	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Spleen	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Eruptions	3	1	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Exposure to Cold	2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Effusion on the Brain	6	1	0	0	0	0	0	0	0	0	2	1	2	2	0	0	0	0	0	7
Lungs	0	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Excessive Heat	13	3	0	0	0	0	0	0	0	0	2	7	6	1	0	0	0	0	0	16
Fever	23	12	15	4	6	4	4	3	2	0	2	7	2	2	2	1	0	0	0	35
Bilious and Remittent	25	33	11	15	2	3	6	4	3	8	12	8	2	5	2	3	0	0	0	58
Intermittent	2	1	1	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	3
Carried Over	1726	1436	941	768	931	323	199	104	47	80	346	330	263	187	148	103	30	5	2	3148

DISEASES.	Males.	Females.	Boys	Girls.	Under 1 Year.	1 to 2	2 to 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100 to 110	Total.
Brought Over	1726	1426	941	768	931	323	199	104	47	80	346	330	262	187	143	102	30	5	2	3148
Fever Typhus and Nervous	38	23	10	5	0	1	1	4	6	3	23	10	8	3	1	0	1	0	0	61
Scarlet	38	45	36	42	0	15	37	18	2	0	2	2	1	0	0	0	0	0	0	83
Puerperal	0	19	0	2	0	0	0	0	2	2	9	6	2	1	0	0	0	0	0	19
Hectic	4	1	1	0	0	0	0	0	0	1	0	3	0	1	0	0	0	0	0	5
Brain	1	2	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Worm	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Congestive	1	1	2	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5
Peritoneal	1	2	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	0	5
Inflammatory	3	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Fracture	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
of the Skull	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Fungus Hæmatodes	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
Gout	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Gravel	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hæmorrhage	18	16	7	4	8	0	2	0	0	1	0	5	0	0	1	0	0	0	0	34
Hooping-Cough	26	22	26	22	23	9	14	1	0	0	0	0	1	0	0	0	0	0	0	48
Hernia	3	3	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	6
Hydrophobia	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Inflammation	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
of the Brain	65	39	45	29	24	18	16	4	0	0	0	0	0	0	0	0	0	0	0	106
Throat	12	7	6	6	3	2	4	2	0	0	0	0	0	0	0	0	0	0	0	19
Wind-pipe	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Lungs	90	79	52	56	56	21	17	7	2	0	0	0	0	0	0	0	0	0	0	100
Breast	9	6	8	6	5	4	2	3	0	0	0	0	0	0	0	0	0	0	0	15
Heart	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Pericardium	1	3	1	2	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	4
Liver	20	17	4	1	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	37
Stomach	19	22	9	6	8	1	1	1	0	0	0	0	0	0	0	0	0	0	0	41
Bowels	62	49	32	20	26	10	8	3	0	0	0	0	0	0	0	0	0	0	0	111
Kidney	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Uterus	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Bladder	3	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Mucous Membrane	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Spinal Marrow	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Veins	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Introsusception	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Inanition	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Intemperance	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Insanity	19	9	3	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	34
Irritation of the Brain	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Spinal Marrow	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Intestines	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Injury of the Brain	2	1	0	2	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	7
Abdominal Viscera	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Influenza	2	6	1	4	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	10
Jaundice	6	3	4	2	2	1	3	2	0	0	1	1	1	1	0	0	0	0	0	24
Laudanum to excess	3	7	2	2	3	1	3	4	0	1	1	1	1	0	0	0	0	0	0	30
Locked Jaw	17	3	7	4	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	90
Mortification	3	4	3	1	3	4	0	1	0	0	0	0	0	0	0	0	0	0	0	12
Measles	76	74	14	5	0	7	8	5	0	0	0	0	0	0	0	0	0	0	0	189
Mania a Potu	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Malformation	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Murdered	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Necrosis	23	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68
Old age	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	14	36	13	67
Ossification of the Heart	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3
Arteries	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Obstruction of Liver and Bronchi	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Palsy	22	24	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	54
Pleurisy	5	6	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	13
Purpura Miliaris	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Pemphigus	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Polysarcia	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Poison	0	5	1	7	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	18
Rheumatism	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Rickets	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Rupture of Blood Vessel	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Aorta	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Intestines	174	134	174	134	308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	951
Still-born	2542	2100	1393	1145	1340	415	328	149	71	116	480	490	366	256	218	139	84	21	4	9499
Carried Over																				

DISEASES.	Males.	Females.	Boys.	Girls.	Under 1 Year.	1 to 2	2 to 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100 to 110	Total.
Brought Over	2542	2100	1393	1145	1340	415	323	149	71	116	480	480	366	256	218	138	84	21	4	4618
Small-Pox	118	77	69	87	47	16	36	14	7	6	45	14	6	3	0	0	0	0	1	195
Scrofula	5	2	3	2	2	0	0	1	0	2	1	1	0	0	0	0	0	0	0	7
Syphilis	3	6	1	2	1	0	1	0	0	1	1	5	0	0	0	0	0	0	0	9
Softening of the Brain	3	2	1	0	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	5
Suicide	8	1	1	0	0	0	0	0	0	1	3	2	3	0	0	0	0	0	0	9
Sudden	11	10	3	3	5	0	0	1	0	0	2	2	4	2	1	2	2	0	0	21
Suffocation	5	1	2	1	3	0	0	0	0	0	0	1	1	0	1	0	0	0	0	6
Scirrhus	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
of the Liver	1	3	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	4
Stomach	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Pylorus	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Uterus	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Prostate Gland	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Stroke of the Sun	7	1	1	0	0	0	0	0	0	1	1	3	2	0	1	0	0	0	0	8
Sarcoma, Medullary	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Stricture of the Colon	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Thrush	4	4	4	4	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8
Teething	3	7	3	7	7	2	1	0	0	0	0	0	0	0	0	1	0	0	0	10
Tumour, Fungous	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
on the Throat	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Ulceration	2	2	2	0	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	4
of the Mouth	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Throat	2	2	1	0	1	0	0	0	0	0	2	0	1	0	0	0	0	0	0	4
Lungs	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Stomach	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
Bowels	1	4	1	2	0	1	2	0	0	0	1	0	0	0	1	0	0	0	0	5
Sacrum	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Unknown	55	50	30	29	50	2	5	0	1	1	10	12	3	12	7	0	2	0	0	105
Varioloid	14	3	6	2	1	2	2	1	1	1	8	1	0	0	0	0	0	0	0	17
Vomiting	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Worms	4	2	4	2	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0	6
Wounds	9	1	1	0	0	0	0	0	0	1	2	1	3	2	1	0	0	0	0	10
	2810	2263	1526	1258	1578	442	385	168	81	130	559	547	394	279	244	149	91	21	5	5073

Of the above, there were Males of twenty years and upwards, 1,285; under twenty years, 1,526; Females of twenty years and upwards, 1,005; under twenty years, 1,258.

There were 356 returns received at the Health Office, of persons who died in the Alms-house of the City and Districts during the year; 519 people of colour are included in the total number of deaths.

Agreeably to returns made at the Health Office and collected from one hundred and fifty-one Practitioners of Midwifery, there were born in the City and Liberties, during the year 1834, 3,937 Male, and 3,635 Female Children, making the total number of Births 7,572, leaving a difference between the Births and Deaths of 2,499.

Deaths in Each Month of the Year.

	Adults.	Children.	Total.
January	200	212	412
February	160	194	354
March	181	234	415
April	160	152	312
May	154	167	321
June	121	210	331
July	261	506	767
August	163	311	474
September	219	214	433
October	347	242	589
November	146	165	311
December	177	177	354
	2289	2784	5073

By Order of the Board of Health.

WM. A. MARTIN, *Clerk.*

Health Office, Philadelphia, January 1st, 1835.

Remarks on the preceding Bill of Mortality. By G. Emerson, M. D.—The deaths reported in 1834, exceed those of the preceding year 633, most of which excess is to be ascribed to a slight visitation of malignant cholera in September and October, together with an increased mortality from the ordinary forms of bowel complaints, small-pox, varioloid, and bronchitis.

The proportions from some of the most fatal sources of mortality, compared with those of the preceding years, stand thus:—

DISEASES.	1831.	1832.	1833.	1834.
Consumption	673	681	650	636
Convulsions	277	342	266	277
Small-pox	14	37	156	195
Varioloid	4	6	12	17
Measles	23	118	1	7
Scarlet Fever	200	307	61	88
Puerperal Fever	14	8	32	
Croup	127	110	95	81
Hooping-cough	67	58	53	48
Bronchitis	63	97	37	121
Apoplexy	60	78	55	76
Inflammation of the Brain	89	102	74	104
Fevers, (exclusive of Scarlet and Puerperal)	276	453	263	175
Cholera Maligna		948		151
Bowel compl'ts, (exclusive of Cholera Maligna)	522	689	337	623
Inflammations of all kinds	505	588	473	521
Dropsies	367	364	302	353

Of the deaths from bowel affection, 151 were reported under the head of cholera, by which was meant cholera maligna; 53 cholera morbus, and 377 cholera infantum. Of dysentery there were 70 deaths, and of diarrhœa 123; making the total of bowel complaints this year no less than 774—more than double that of the preceding year, when it was but 337.

Of the deaths by cholera, (maligna,) the males exceeded the females 2 to 1. Of the 43 designated cholera morbus, 40 were males, and 13 females; of 377 by cholera infantum, 206 were males, and 171 females. They were each distributed under the following ages:—

DISEASES.	Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90
Cholera, (Maligna)	0	1	4	3	2	2	28	31	37	26	14	2	1
Morbus	1	0	1	2	1	2	13	11	12	4	2	2	2
Infantum	248	101	23	5	0	0	0	0	0	0	0	0	0

The mortality under the head of cholera infantum exceeded that of the preceding year no less than 180. The cholera epidemic influence which existed during a portion of the past year, had therefore the effect of increasing the mortality from other forms of bowel complaints.

The period during which the deaths from cholera, (maligna,) were reported, lasted from the middle of September to the 1st of November, about six weeks. The week included between the 27th September and 4th of October, presented the greatest mortality, namely, forty-eight. The week preceding this, twenty-one were reported, and twenty-seven the week following.

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Cæsarean Operation.—Our last number contains an account by Dr. J. G. Nancrede of a case of deformed pelvis in which the Cæsarean operation was successfully performed by Professor Gibson. The following details of the

operation, which are much more minute than those given by Dr. Nancrede, cannot fail to be interesting to our readers. We extract them from the recent edition of the Institutes and Practice of Surgery by the operator.

"A firm table was selected, and covered with a mattress and sheets, the patient placed upon it, on her back, and her pelvis and shoulders supported by pillows. In presence of Dr. Nancrede, Professor Dewees, Dr. Dove of Richmond, Professor Horner, Dr. Beattie, Dr. Wm. Coxe, Dr. Theodore Dewees, and my son, Charles Bell Gibson, I made an incision, at the centre of the linea alba, commencing about an inch below the umbilicus, through the integuments, and extending nearly to the pubes. To save the patient pain, and to prevent this first, or perpendicular cut from penetrating too deeply, I requested Dr. Horner to fold up the skin with his fingers, and while thus held I passed the knife through it with its back towards the abdomen. The superficial fascia being exposed was divided, then the tendons of the abdominal muscles, next the peritoneum, and lastly the body of the uterus, all to the extent of six inches. The uterus, however, at this stage of the operation, was not cut entirely through, but a line or two in thickness, of the interior of its walls left, with the view of drawing off the waters before I opened the womb, penetrated the membranes and exposed the child. At my request Dr. Nancrede introduced a finger into the os uteri and endeavoured to rupture the membranes, but could not succeed. A similar attempt was made by Dr. Beattie, which also failed. Having resumed the knife, the remaining fibres of the uterus were divided, the membranes exposed, and cautiously opened by running Cooper's bistoury for stangulated hernia, upwards and downwards, to the extent of six inches, while Dr. Horner held closely together the sides of the wound, to prevent protrusion of the intestines and the escape of any portion of the waters into the bag of the peritoneum.

"There was a right lateral obliquity of the uterus, and the position of the child found to correspond with the third breech presentation of Baudelocque. Dr. Beattie then introduced his hand, and drew out the feet, while Dr. Nancrede supported the hips and back, and removed the body, and lastly, the head of the child, from the womb. It proved a girl of large size, and apparently healthy. For some seconds, however, it did not breathe, and, indeed, not until friction on the chest, blowing into the mouth, and the introduction of a few drops of brandy were resorted to. The cord being cut, the child was removed, and in a short time cried lustily. Whilst Dr. Horner still kept the sides of the wound together, Dr. Beattie extracted without difficulty the placenta and membranes, and at the same time, pushed a finger from the interior of the uterus through the os tincæ, to make a free communication with the vagina. During these manipulations, two portions of intestine, each the size of a pigeon's egg, protruded on the right side of the uterus, and near the upper corner of the wound. They were readily kept back, however, and did not again protrude; nor did any fluid, so far as could be observed, find its way into the peritoneal bag. No hæmorrhage took place from the removal of the placenta, nor was it necessary to secure a single vessel with the ligature. There was a visible contraction of the womb, after the removal of its contents, and the incision in it had sensibly shortened in the course of a few seconds.

"My attention was next drawn towards closure of the wound. With great care, and the utmost nicety, the edges of the peritoneum, muscles, and integuments were held together by assistants, while I passed, successively, three stout silk ligatures, in form of interrupted suture, through the integuments—avoiding the peritoneum and muscles—an inch and a half from each other, and supported the whole by adhesive straps, lint, a compress and roller around the abdomen. To give vent to any secretion of serum or pus, the lower angle of the wound was left open for the space of half an inch. The patient was then raised very carefully by several assistants, and laid in bed upon her back, and great pains taken to render her position as comfortable as possible, and to prevent the slightest movement. There was less difficulty in this respect than

could have been anticipated, arising partly from the little pain, comparatively, during the operation, the natural firmness and equanimity of the patient, and her faithful reliance upon Providence for a happy issue out of her affliction. Under the cheering influence of such feelings, she slept soundly for several hours; and did not change her position in the slightest degree.

"By Drs. Nancrede, Beattie and myself,* she was visited, for a week or ten days, three times a day; was kept entirely on barley water, during that time, under the influence of an occasional opiate at night, took now and then small doses of magnesia, or used enemata; had her diet gradually increased; on the twenty-fifth day after the operation was enabled to sit up,—the wound, with exception of a single spot, the size of a pea, being entirely cicatrized—and finally recovered, and now enjoys, together with her child, perfect health."

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Case of Spontaneous Combustion. By James Overton, M. D. of Tennessee. (Extracted from an essay read before the Medical Society of Tennessee at their Annual Meeting in May, 1835.)—The subject of the following case is a gentleman about thirty-five years of age, middle size, light hair, hazel eyes, sanguineo-lymphatic temperament, of habits entirely temperate in the use of stimulating drinks of any kind, fermented or alcoholic, with a constitution considerably enfeebled from long and zealous devotion to the sedentary and exhausting labour of scientific investigation. In early life he was very subject to derangements in the functions of the stomach and bowels; and at the present time suffers frequently from different modifications of these maladies, as costiveness, occasional diarrhœa, acidity of the stomach, heart-burn, &c. &c., with their usual train of sympathetic affections, involving parts of the organism at a distance from the primary seats of diseases into a participation of their suffering.

At the time of the occurrence of the accident, he was afflicted with acidity of the stomach, and by an unusual and irritating quantity of the matter of urea in the secretion of the kidneys; for the relief of which, he was in the habitual use of aperients, antacids, &c.

Mr. H., Professor of Mathematics in the University of Nashville, was engaged as usual in his recitation room, in attendance upon the morning exercises of his class till 11 o'clock in the forenoon. He then buttoned his surtout coat close around him, and walked briskly thus clothed to his residence, a distance of about three-fourths of a mile, taking exercise enough to produce a glow of warmth on the surface of the body, without inducing fatigue, but feeling at the same time his usual acidity of the stomach, for which he resolved to take some soda as a remedy within a short time. Having arrived at his lodging, he pulled off his over-coat and kindled a fire, by placing a few pieces of dry wood on three burning coals which he found in the fire place, of the magnitude of two inch cubes each; and immediately left the fire, and retired to a remote part of the room and made his observations on the weight and temperature of the atmosphere as indicated by the barometer and thermometer, which were suspended in that situation. He then took the dew-point by the thermometer. These operations, together with the registration of their results, occupied about thirty minutes. This having been accomplished, he went immediately into the open air, made observations on the hygrometer, and was beginning his observations upon the velocity and direction of the winds. He had been engaged in this latter process about ten minutes, his body all the while sheltered from the direct impression of the wind, when he felt a pain as if produced by the pulling of a hair, on the left leg, and which amounted in degree to a strong sensation. Upon applying his hand to the spot pained, the sensation suddenly increased, till it amounted in intensity to a feeling resembling the continued sting of a wasp or hornet. He then began to slap the part by

* "After the operation the patient was kindly visited, repeatedly, by Drs. Dewees, William Coxe, Horner, Spackman and others."

repeated strokes with the open hand, during which time the pain continued to increase in intensity, so that he was forced to cry out from the severity of his suffering. Directing his eyes at this moment to the suffering part, he distinctly saw a light flame of the extent at its base of a ten cent piece of coin, with a surface approaching to convexity, somewhat flattened at the top, and having a complexion which nearest resembles that of pure quicksilver. Of the accuracy in this latter feature in the appearance of the flame, Mr. H. is very confident, notwithstanding the unfavourable circumstances amidst which the observation must have been made. As soon as he perceived the flame, he applied over it both his hands open, united at their edges, and closely impacted upon and around the burning surface. These means were employed by Mr. H. for the purpose of extinguishing the flame by the exclusion of the contact of the atmosphere, which he knew was necessary to the continuance of every combustion. The result was in conformity with the design; for the flame immediately went out. As soon as the flame was extinguished, the pain began to abate in intensity, but still continued, and gave the sensation usually the effect of a slight application of heat or fire to the body, which induced him to seize his pantaloons with one of his hands and to pinch them up in a conical form over the injured part of the leg, thereby to remove them from any contact with the skin below. This operation was continued for a minute or two, with the design of extinguishing any combustion which might be present in the substance of his apparel, but which was not visible at the time. At the beginning of the accident, the sensation of injury was confined to a spot of small diameter, and in its progress the pain was still restricted to this spot, increasing in intensity and depth to a considerable extent, but without much, if any enlargement of the surface which it occupied at the beginning. A warmth was felt to a considerable distance around the spot primarily affected, but the sensation did not by any means amount in degree to the feeling of *pain*. This latter sensation was almost, if not entirely, confined to the narrow limits which bounded the seat of the first attack, and this sensation was no otherwise modified during the progress of the accident, than by its increasing intensity and deeper penetration into the muscles of the limb, which at its greatest degree seemed to sink an inch or more into the substance of the leg.

Believing the combustion to have been extinguished by the means just noticed, and the pain having greatly subsided, leaving only the feeling usually the effect of a slight burn, he untied and pulled up his pantaloons and drawers, for the purpose of ascertaining the condition of the part which had been the seat of his suffering. He found a surface on the outer and upper part of the left leg, reaching from the femoral end of the fibula in an oblique direction, towards the upper portion of the gastrocnemii muscles, about three-fourths of an inch in width, and three inches in length, denuded of the scarfskin, and this membrane gathered into a roll at the lower edge of the abraded surface. The injury resembled very exactly in appearance an abrasion of the skin of like extent and depth, often the effect of slight mechanical violence, except that the surface of it was extremely *dry*, and had a complexion more livid than that of wounds of a similar extent produced by the action of mechanical causes.

The condition of the pantaloons and drawers was next carefully inspected. The left leg of the drawers at a point exactly corresponding with the part of the leg which had suffered injury, and at a point accurately correspondent to the abraded surface, were burnt entirely through their substance. They were not in the slightest degree scorched beyond this limit, the combustion appearing to have stopt abruptly, without the least injury to any portion of the drawers, which had not been totally consumed by its action. The pantaloons were not burnt at all. But their inner surface opposite to and in contact with the burnt portion of the drawers, was slightly tinged by a thin frostwork of a dark yellow hue. The material of this colour, however, did not penetrate the texture of the pantaloons, which were made of broadcloth, but seemed to rest exclusively upon the extremities of the fibres of wool which

were the materials of its fabric. The colouring matter was entirely scraped off with the edge of a penknife without cutting the woolly fibres, after which there remained upon the garment no perceptible trace of the combustion, with which they had been in contact. The pantaloons may be said with entire propriety, to have suffered no injury of any kind from the accident. The drawers, which were composed of a mixture of silk and wool, were made tight and close at the ankle, and tied with tape over a pair of thick woollen socks, in such a manner as to prevent even the admission of air to the leg through their inferior opening. Considering the injury not to be of a serious character, Mr. H. bestowed upon its treatment no particular care or attention, but pursued his usual avocations within doors and in the open air, which was very cold, until the evening of the succeeding day. At this time the wound became inflamed and painful, and was dressed with a salve, into the composition of which the rosin of turpentine entered in considerable proportion. This treatment was continued for four or five days, during which time the wound presented the usual aspect of a burn from ordinary causes, except in its greater depth and more tardy progress towards cicatrization, which did not take place till after thirty-two days from the date of the infliction of the injury. The part of the ulcer which healed last was the point of the inception and intensity of the pain at the time of attack, and which point was evidently the seat of deeper injury than any other portion of the wounded surface. About the fifth day after the accident, a physician was requested to take charge of the treatment, and the remedies employed were such chiefly as are usual in the treatment of burns from other causes, except that twice a week the surface of the ulcer was sprinkled over with calomel, and a dressing of simple cerate applied above it. In the space between the wound and the groin there was a considerable soreness of the integuments to the touch, which continued during the greatest violence of the effects of the accident, and then gradually subsided. The cicatrix is at this time, March 24th, entire; but its surface is unusually scabrous, and has a much more livid aspect than that of similar scars left after the infliction of burns from common causes. The dermis seems to have been less perfectly regenerated than is usual from burns produced by ordinary means, and the circulation through the part is manifestly impeded, apparently in consequence of atony of its vessels, to an extent far beyond any thing of a similar nature to be observed after common burns. Since the wound has healed the health of the patient has been as perfect us usual, and while the wound continued open, his ordinary occupations were interrupted by a week's confinement only to his chamber. The accident occurred on the 5th of January of the present year, the day intensely cold and the thermometer standing at only eight degrees above zero, sky clear and calm, and the barometrical admeasurement of the atmosphere being 29.248 inches. Such is the history of the case of partial spontaneous combustion, which has recently occurred in this city. The facts have been stated as nearly as practicable in the words of the sufferer himself, and are consequently entitled to all the credit attributable to any statement of a similar character, which is or can be supplied by the annals of the profession.

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Profluvium Vaginale—A highly interesting case to which the above epithet has been given is recorded by Dr. Isaac G. Porter, of New-London in the *Medical Magazine* for June last.

"The subject of it is a married woman, twenty-seven years of age, of delicate constitution, the mother of four children, the youngest born October, 1833, after an easy natural labour. In April she was seized with catarrh, followed by pleuritic symptoms, and a severe cough.

"*June 3d.*—She first applied for advice, her friends fearing incipient consumption. Soon after a deep-seated pain in the right hypochondrium appeared, together with enlargement of the liver, and much tenderness on pressure. As this affection and also the cough subsided, much thickness and paucity of

urine manifested itself. This soon diminished under the use of digitalis squills, calomel and opium, but was followed by evident symptoms of abdominal dropsy. Various diuretics, and saline and hydrogogue cathartics were administered,—the former usually failing in their operation, while the latter either had no effect upon the distention, or with a partial diminution produced the most alarming prostration. Tonics were administered to prevent a reäccumulation, but with a return of the hepatic derangement. During the coëxistence of the two affections, tr. iodine, as a diuretic, was found extremely efficacious after having first resorted to small doses of calomel.

"26*th*. She informs me, that a few days since, there was a small discharge of bloody serum from the vagina, which came in a single gush. Recently she has had much distress just above the sacrum, and very severe bearing down pains. To-day, there was another discharge from the vagina,—inodorous, nearly colourless, and in quantity full a pint. From the severity of the shock, or the sudden removal of the 'stimulus of distention,' she nearly fainted. Nothing like a membrane followed. Lower portion of abdomen very sensible to pressure, but diminished in size; high febrile action; urine red, and coagulable by heat.

"*July* 12*th*.—After the last discharge there was constant, though moderate, flooding for nearly a fortnight. During lactation, if we except the three first months, she has always had the catamenia, and as often as once in two weeks, hence the flooding gave little alarm, and was for some time concealed. She has now the sensation of something in the pelvis, which induces the most urgent bearing down pains. Fearing a prolapsus of the uterus, an examination was made, but none was apparent. The os tincæ was found prominent, a little dilated, yet resisting like cartilage. The uterus suddenly distended from the os tincæ towards the rectum, and an obscure feeling of an irregular tumour was in the same position. The parts were so excessively tender as to resemble the irritable uterus.

"14*th*. There has been much difficulty of passing water of late, and to-day a large quantity was withdrawn by the catheter. I may here anticipate so far as to say, that this operation became necessary, once, twice, or thrice, each day, for the succeeding six weeks. Contrary to my direction, she would occasionally make efforts to relieve herself, but of that which passed, according to her own confessions, the half was blood.

"23*d*. Of late there have been evident signs of peritonitis. The tenderness of abdomen is so great, that the weight of the bed clothes can scarcely be endured. Pains in the back, and the bearing down sensation still continue. Examination detects considerable prolapsus of the uterus.

"*Aug*. 1*st*.—During a painful expulsive effort last night, another vaginal discharge took place, sufficient in quantity to wet eight folds of a sheet. The catamenia, which had continued two days, ceased last evening, and the discharge was not tinged. Patient is much relieved, and abdomen diminished in size. Sensibility of uterus greater than ever, as found by examination.

"10*th*. Since the last date the patient has passed water freely by catheter, a decoction of the root of an indigenous article, the Asclepias syriaca, proving effectual after many other diuretics had failed. After imprudent exertion and taking cold, a relapse ensued, and she was as much distended as at the ull period of pregnancy. Last night there was another eruption of serum from the vagina, so profuse as to wet a folded sheet thoroughly in every part. The water had an offensive odour, or, as she expressed it, 'smelt feverish.' It was without colour, and came away in two distinct floods, rapidly succeeding each other, yet both attended by a propulsive effort. There has been of late much bearing down pains, and the same distress above the sacrum. In no instance has any thing like a membrane followed the discharge. Temporary, but extreme prostration always ensues. The abdomen is now much less distended and tender than for weeks. The distention which remains is confined to the right side of the abdomen, and a moderately firm tumour, apparently

larger than an orange, is perceptible amid the swelling in the right portion f the hypogastric region,—slightly moveable and not peculiarly sensible to pressure. Tr. iodine again resorted to—also one of the following pills four times a day:—Ext. conii. ʒiss.; Carb. ferri, ʒij. M. f. pil. No. III.

"25*th*. The distention of the abdomen having almost entirely subsided, I resolved to ascertain whether the prolapsus, which had now become extreme, could not be remedied by a pessary. This has been often thought of, but rejected, owing to the great distention of the abdomen, and the extreme sensibility of the uterus. After reducing the prolapsus, a pessary was introduced, but could not be endured. Finding, however, that the uterus still maintained its place, the horizontal position was enjoined, the urine as previously being drawn off by the catheter.

"30*th*. Appetite has returned, and she is beginning to regain her health and strength. The pain in the back, which has been long diminishing, has ceased, and she passes water without difficulty.

"*Feb*. 11*th*, 1835.—Owing to exposure to cold, Mrs. S. has had a slight return of hepatic inflammation, followed by her former dropsical complaints. The distention was chiefly confined to the right portion of the hypogastric region, where there was much tenderness on pressure; bearing down pains severe, and following each other at regular intervals; pulse 120. This affection soon yielded to digitalis, calomel and opium,—the swelling in the right hypogastric region nearly disappearing with the hydropic symptoms. She informs me that since the middle of September, her health has been tolerably good,—that two months since she had another discharge from the vagina, and six weeks after another, each consisting of more than a pint, and each accompanied by intense bearing down pains, and preceded by much distention in the right portion of the pelvic region, which subsided with the discharge.

"Is the foregoing a case of solitary hydatid? For reasons of her own, our patient had thought herself pregnant for two or three months previous to the first eruption, Nothing, however, like a membrane has, in any instance, followed the discharge. Constipation and retention of urine existed, but compression produced by any other cause than hydatids, would have a similar effect.

"From the enlargement in the pelvic region, may we suppose that dropsy of the right ovarium existed along with abdominal dropsy? The question may subject us to the charge of credulity, and we confess the 'quo modo,' by which the water could be discharged, does not appear. Munro, however, relates a case, (referred to in James' edition of Burns, Vol. I.) of a woman who died of ovarian dropsy, and who previously had been relieved by a discharge of the dropsical fluid, per vaginam.

"Or, is it an instance of the discharge of fluids, which had been 'retained in the uterus in some inexplicable way.' Such cases are alluded to by Denman, Dewees and others, and are not very rare, the writer having now a patient, who is occasionally subject to sudden bursting of serum from the vagina, but without any of the attendant symptoms of the case above detailed. It will be recollected, that in one instance, the catamenia ceased but a few hours previous to a discharge, thus showing that there could be no occlusion of the uterus, or that the fluid must have been contained in a cyst, that has never been discharged."

—

Cure of Hernia.—We invite the attention of our readers to the advertisement, at the close of this number, of a truss for the cure of hernia, by Mr. Chase. We have examined his instruments, and have had opportunities of witnessing their application in several cases, and they seem to us to hold out greater promises of effecting a cure of hernia, than any other instrument hitherto devised.

The Philadelphia Medical Society has appointed a committee to investigate the subject of the radical cure of hernia, and they have now under observation

several cases which Mr. Chase is treating with his truss. We hope to be able to present their report in our number for May next. We understand that so far as their investigations have proceeded, the results are favourable to the instrument.

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Remedial Powers of the Ceanothus Americanus. By Dr. D. H. Hubbard.—I do not remember to have seen any reference made, (medicinally,) to the Ceanothus Americanus of Linnæus. Its sensible properties led me to use it in a case of aphthæ, and subsequently in other derangements of mucous surfaces, where I found it of some importance. Professor Bigelow describes the ceanothus as follows. "Leaves heart ovate, accuminate, triply nerved. Panicles axillary elongated. A small white flowering shrub, not unfrequent in dry sandy soils. Leaves two or three inches long and one broad, finely serrate, and tapering into a long point. From the axils of the upper leaves come out leafless branches bearing crowded bunches of minute white flowers. These are followed by dry three seeded, and somewhat triangular berries. The leaves were used among other substitutes for tea during the American revolution." I might add that the dried leaves and seeds have an odour, when bottled, not unlike imported tea. It has a slight bitter, and somewhat astringent taste. I first used it in case of an old lady of seventy, who had a severe thrush following typhus. The usual gargles were tried without much effect. Every second or third day a new coat of darker hue would cover the whole interior of the fauces. The mucous membrane after its discharge presented a dark florid appearnnce, with extreme sensibility. I had tried borax, alum, nitras argenti, vegetable astringents and tonics, as gold thread, crane's bill, hardhack, oak bark, sumach, &c. without much benefit. The ceanothus growing near, I directed a strong tea to be made of it, which acted like a charm; the thrush soon passed off, and without relapse. Since then I have used it largely in aphthæ of children, and find it highly useful in cases following dysenteria maligna, as well as those of less debility and disease, even after other gargles have been ineffectually tried. During last March and April, scarlatina, attended in most cases with ulceration of the fauces, was very prevalent with us; I depended almost exclusively upon the ceanothus, with borax for a gargle, and in all but a single case of very malignant character this gargle was effectual. The form I used, and which I found best adapted for the cases as presented, was prepared by making a strong tea of the ceanothus and flowers of Anthemis cotula, and to a gill add a piece of borax the size of a large pea. I think the borax and Mayweed rendered it in many cases more effectual. I have also used it with benefit in form of a tea in dysenteria of children, and found it fully equal in many cases to the Speica tormentosa. The tea I used was prepared from the leaves and seeds.—*Boston Med. and Surg. Journ. September 30th*, 1835.

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University of Pennsylvania.—A Professorship of the Institutes of Medicine has been added to the Medical Faculty of this University, and the chair filled by the appointment of Dr. Samuel Jackson, formerly lecturer on that subject, as assistant to Professor Chapman, and whose services in that office have contributed much to the lustre of the school. Dr. Jackson's well-known erudition, his extensive reputation as a physician, and his popularity as a lecturer, render his accession in a permanent situation a subject of congratulation to the institution.

The Professorship of Materia Medica, vacated last spring by the removal of Dr. J. R. Coxe, has been conferred on Dr. George B. Wood. Professor Wood is known as the author, in conjunction with Dr. Bache, of the best Dispensatory in our language; he is a practitioner, a scholar of indefatigable industry and sound judgment, and will undoubtedly give a judicious, useful, and satisfactory course.

Biographical Notice.—Thomas Semmes, M. D. was born in Prince George's County, Maryland, August 13th, 1779. He prosecuted his professional studies at Alexandria, Virginia, under the direction of the late Dr. Elisha Cullen Dick, and graduated at the University of Pennsylvania in the year 1801. His inaugural dissertation on the general effects of lead, and on the nature and properties of the *Saccharum saturni*, presented many striking and original observations concerning the character of that substance, and was distinguished by a depth of reflection and solidity of judgment which gave evidence of future eminence in his profession.

After having visited France, Spain, and several other countries in Europe, Dr. S. returned to Alexandria, where he continued to reside, and to pursue the practice of medicine until the period of his death.

An indisposition to appear before the public as an author, great diffidence, and a love of retirement, were the causes why talent and learning of no ordinary degree remained in comparative obscurity. He preferred the secluded path of duty, benefiting his fellow men by the personal application of his great skill and knowledge, to stations which he could easily have attained, but in which, though his abilities might have appeared more conspicuous, his usefulness might have been more questioned.

The theoretical views of Dr. S. were clear, profound, and often bold and original. His practical success was almost unprecedented, and the public confidence was never, at any moment or under any circumstances, withheld from him. That confidence was amply repaid by his energy, zeal, and untiring assiduity in his practice generally; but more especially during the epidemics which raged in Alexandria in 1803 and 1821, and more recently, during the prevalence of the Asiatic cholera, so called, in the summer of 1832.

The acquirements of Dr. S. were not confined to medical knowledge. He was an excellent scholar, and well read in general literature. His personal virtues and accomplishments are recorded in the hearts of all who knew him. Well may the remark of Horace, concerning his friend, be applied to him—he was "*homo ad unguem factus.*"

The following epitaph has been inscribed upon his tomb:—

MEMORIAE ·
THOMAE · SEMMES · M · D ·
VIRI · ANTIQVAE · VIRTVTIS · ET · MANSVETISSIMI ·
INGENI ·
MEDICINAE · SCIENTIA ·
QUOQVE · ET · OMNI · DOCTRINA ·
CLARI ·
DE · PATRIA · ET · DE · CIVIBVS · ALEXANDRINIS ·
OPTIME · MERITI
PIVS · VIXIT · ANN · LIV · M · XI · D · XVIII ·
IVSTITIA · COMITATE · BENIFICENTIA ·
CARVS · OMNIBVS
VITAM · BENE · ET · CVM · HONORE · ACTAM ·
MORS · CHRISTIANA · FINIVIT

NATVS · A · D · MDCCLXXVIII · ET · DIE · AVG · XIII
OBIIT · DIE · IVLII · XXXI · A · D · MDCCCXXXIII

QUARTERLY

MEDICAL ADVERTISER.

IN consequence of the extended circulation of the AMERICAN JOURNAL OF THE MEDICAL SCIENCES, the Proprietors intend, in compliance with the wishes of many of their Friends, to affix to each No. a Sheet of Advertisements. All Booksellers, Medical Gentlemen, and others desirous of taking advantage of this mode of announcement, will please address their Advertisements to CAREY, LEA & BLANCHARD, Philadelphia, by the 10th day of the month preceding that of the publication of the Journal, viz. on 10th July, 10th October, 10th January, and 10th April.

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Philadelphia, January 20, 1830.

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The Lectures commence annually on the first Monday of November, and continue until the ensuing March.

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Materia Medica and Pharmacy.	By GEORGE B. WOOD, M. D.
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Dean of the Medical Faculty.

ADVERTISEMENT

TO THE

MEDICAL PROFESSION.

Through the medium of this Journal, we announce to the Medical Profession that we have in our possession an improved set of instruments for the cure of Hernia.

These instruments consist of—

An Umbilical and Ventral Truss.
An Inguinal and Scrotal Truss.
A Femoral Truss.
And a Double Truss for Double Ruptures.

They are constructed upon surgical and anatomical principles, and each truss is adapted to that species of rupture which it is intended to cure.

The manner of applying pressure to the ruptured parts, and of retaining the bowel so as to produce a permanent cure, is upon a principle not heretofore practised.

From the success that has attended these instruments in our hands, from the principles which they involve in their action, and from a belief that when judiciously used, they will be found of the greatest utility to mankind, we invite the profession to examine their construction, to investigate the principles of their action, and to witness their effects.

To the following medical gentlemen I am permitted to refer. Several of whom have witnessed the use of these instruments in my hands, and before whom I have brought patients previous to their application and during the process of cure.

The advertiser has permission to refer to Professors Gibson, Horner, Jackson, Parker, Childs, M'Clelland, Pattison, and Drs. R. Coates, Ashmead, J. Parrish, T. Harris, B. Coates, W. Rush, Bond and Hays.

These instruments must be used by surgeons versed in the anatomy of hernia, and in the principles of cure.

They will be placed in the hands of surgeons, and will ever be retained in the profession.

Responsible medical gentlemen throughout the United States are invited to take an interest in the use of these instruments, and to those thus desirous, all necessary information in relation to the manner of use, and their mode of action will be given.

Orders for instruments must be made through a surgeon, giving a state of the case in question, the species of hernia, the size of the patient, and the side ruptured.

Directions for use will accompany each instrument.

I am now prepared to treat patients of both sexes labouring under every variety of hernia with these instruments, and can, with great confidence, ensure a permanent cure of this disease.

Patients will receive every attention when placed under our care.

Any information in relation to the above instruments, and manner of treating hernia will be freely given to the profession.

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Requisites and Fees of Graduation the same as in the University of Pennsylvania.

NEW MEDICAL WORKS.

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HAVE IN PRESS THE FOLLOWING NEW MEDICAL WORKS:—

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PRINCIPLES of PATHOLOGY and PRACTICE of PHYSIC. By JOHN MACKINTOSH, M. D. Lecturer on the Practice in Edinburgh. From the last London Edition, with notes and additions, by SAMUEL GEORGE MORTON, M. D. Physician to the Philadelphia Alms-house Hospital, Lecturer on Pathological Anatomy, &c. &c.

The American Edition will embrace besides much other new matter, an exposition of the pathological doctrines of fever as taught by Broussais, Chomel, and others; a chapter on the Epidemic Cholera; an appendix of upwards of one hundred prescriptions adapted to the practice of the United States, &c. &c. &c.

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"We recommend strongly the study of the author's hygienic remarks to our professional brethren; indeed, we think that every parent ought to be acquainted with the excellent rules laid down on nursing, dress, bathing, air, exercise, and education. We have seldom seen a medical work more deserving of general circulation, or one that we would more zealously recommend to the younger members of the profession."—*Med. Quart. Rev. April*, 1835.

"In addition to its merits as a professional work, it abounds in information intelligible to every rational creature, and particularly important for parents, the guardians of youth, and the young themselves to be made acquainted with. But what we regard as his distinguished excellence, is the truth of observation, logical and comprehensive clearness, and entire success with which he traces the history of the disease."—*The Scotsman, Edinburgh Political and Literary Journal.*

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TO READERS AND CORRESPONDENTS.

Communications have been received from Drs. Brigham, A. Smith, Weems, and Ramsay.

Dr. Pennock's paper has been unavoidably postponed, in consequence of the impossibility of having the plates coloured in due time.

Our report of the cases treated during the past quarter at Wills' Hospital, has been excluded, to make room for the communications of our correspondents.

The following works have been received:—Elements of Medical Jurisprudence. By THEODORIC ROMEYN BECK, M. D., Professor of the Institutes of Medicine and Lecturer on Medical Jurisprudence in the College of Physicians of the Western District of the State of New York, and JOHN B. BECK, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons, New York, &c. 5th edition. Albany, 1835, 2 vols. 8vo. (From authors.)

Principles of Pathology and Practice of Physic. By JOHN MACKINTOSH, M. D. Lecturer on the Practice of Physic in Edinburgh, &c. &c. From the last London edition, with notes and additions. By SAMUEL GEORGE MORTON, M. D., late Physician of the Philadelphia Alms-house Hospital, Lecturer on Pathological Anatomy, &c. &c. 2 vols. 8vo. Philadelphia, Key & Biddle, 1836. (From the Editor.)

Animal and Vegetable Physiology, considered with reference to Natural Theology. By PETER MARK ROGET, M. D., Secretary to the Royal Society, Fullerian Professor of Physics in the Royal Institution of Great Britain, &c. &c. Philadelphia, 1835. Carey, Lea & Blanchard. 2 vols. 8vo, with 463 engravings. (From the publishers.)

A Further Inquiry concerning Constitutional Irritation and the Pathology of the Nervous System. By BENJAMIN TRAVERS, F. R. S., Senior Surgeon of the St. Thomas's Hospital, &c. &c. &c. London, Longman & Co. 1835. (From the author.)

A Treatise on Pulmonary Consumption, comprehending an Inquiry into the Causes, Nature, Prevention, and Treatment of Tuberculous and Scrofulous Diseases in general. By JAMES CLARK, M. D., F. R. S., Consulting Physician to their Majesties the King and Queen of the Belgians, &c. &c. Philadelphia. Carey, Lea & Blanchard, 1835. (From the publishers.)

Die Cholera in Wien. Von A. D. BASTLER, M. D. &c. Wien, 1832. (From Dr. Von dem Busch.)

Die Cholera Epidemie in Danzig. Von E. O. DAUN. Danzig, 1831. (From Dr. Von dem Busch.)

Observations on the Influence of Religion on Health and the Physical Welfare of Mankind. By AMARIAH BRIGHAM, M. D. Boston, 1835. (From the author.)

A Critical and Experimental Essay on the Circulation of the Blood; especially as observed in the minute and capillary vessels of the Batracia and of Fishes. By MARSHALL HALL, M. D., F. R. S., &c. &c. Philadelphia: E. L. Carey & A. Hart, 1835. (From the publishers.)

Researches Principally relative to the Morbid and Curative Effects of the Loss of Blood. By MARSHALL HALL, M. D., F. R. S. &c. 2nd American edition. Philadelphia: E. L. Carey & A. Hart, 1835. (From the publishers.)

Oration on the Defects of the Present System of Medical Instruction in the United States. Read before the Philadelphia Medical Society, 21st November, 1835. By REYNELL COATES, M. D., Honorary Member of the Society, &c. &c. Philadelphia, 1835. (From the author.)

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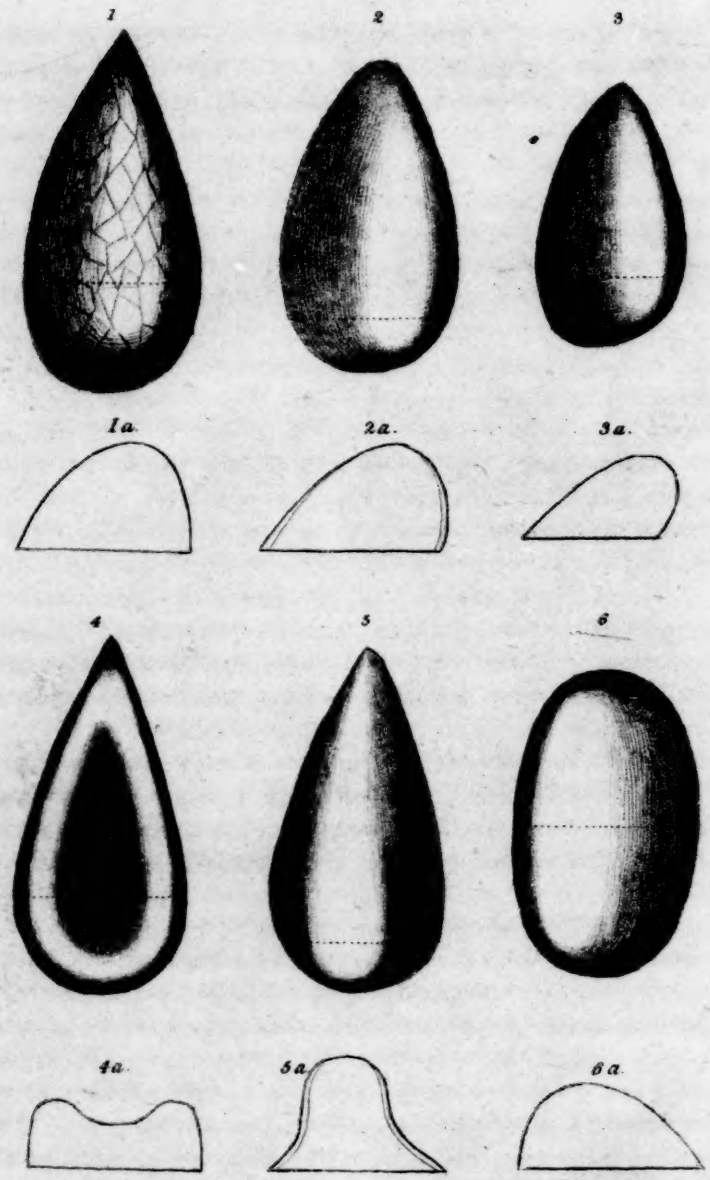

Explanation of the plate.

1. Stagner's Inguinal Block		1a. Transverse section of	do.
2. Hood's do.	do.	2a. do.	do. "
3. Hood's Block with Parabolic projection for Ventro-inguinal Hernia		3a. do.	do. "
4. Hood's Plano-concave Ventro-inguinal Block		4a. do.	do. "
5. Hood's Femoral Block.		5a. do.	do. "
6. Chase's Inguinal and Femoral	do.	6a. do.	do. "

The Sectional Views are taken through the highest points of elevation which are indicated by the dotted lines.